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MAY, 1928

ISSUES IN ECONOMIC THEORY
AN ATTEMPT TO CLARIFY

SUMMARY

I. Controversies in economic theory are of varying importance, — The explanatory and instrumental aspects of economic theory, 335. — Changing facts and social theories, 337. — II. The place of "facts" in economic controversy, 339. — The relation of psychology to economic theory, 343. — Mechanistic and organic social theories as a source of controversy, 347. — Difficulties arising out of the organic analogy, 349. — III. The philosophy of "social control," 351. — IV. Chaotic possibilities of "viewpoints" in economics, 355. — Uses and limitations of the mechanistic view, 356. — Types of new "approaches" to economics, and their limitations, 359. — Sacrifices entailed in eliminating controversies, 360. — The scientific character of economics, old and new, 362.

I

THERE are at present outstanding in economics a number of unresolved controversies; but that is so perennial a situation in economic theory, as indeed in all fields of thought, that it is hardly an occasion for comment. Certain of these controversies will, it seems probable, lapse by reason of a withdrawal of professional interest. Others, however, represent the points upon which the thinking of contemporary economists is actively divided, and it is these that one may hope are capable of some settlement in the interests of united scientific accomplishment. While published contro-

versal articles are a minor and neglected aspect of current economic writing, one may not overlook the fact that quite fundamental differences do divide economists, and the absence of open discussion tends to solidify these divisions into antipathetic dogmatisms. This theoretical uncertainty has rather the effect of creating an attitude of tolerant or disdainful indifference on the part of many economists mainly engaged in work of a narrower or more obviously practical character. It does not, however, seem reasonable that economists, whatever their central fields of interest, should retard the development of a discipline adequate for dealing with the complex facts of economic life by remaining either intolerant or indifferent toward theoretical issues.

Economic theory plainly has two distinguishable, though related, functions, the one explanatory, the other instrumental. In performing the explanatory function, economics has been traditionally concerned with an objective examination of the dominant forces at work, and with an analysis of the intricate way in which these forces operate in the economic sphere, in the attempt "to disentangle the interwoven effects of complex causes." To comprehend the nature of the forces at work has necessitated close inquiry into economic organization and practice, and it is only by similar close inquiry that those effects may be discerned which it is desired to explain. It has been assumed that an economic sphere could be sufficiently marked off within the general social life of mankind to permit isolated scientific analysis therein. The problem of defining economics has been that of marking off this sphere, and, however the definitions have differed in detail, the phenomena concerned have generally been included on the test of their having a price or of their relevancy to explaining prices. Separate prices, prices in general, in-

terdependent relationships of prices, the psychological background of prices, the institutional organization of the price-making process, the immediate and more remote effects of prices, prices of commodities and of services — these and similar problems have typically been the major scientific concern of economists. Their professional business has been to amass the necessary information, to create and use the necessary analytical tools, to produce the desired generalized explanations of the phenomena observed.

The instrumental function relates itself to the practical problems which endlessly present themselves to organized societies, or to individuals or groups within those societies. So far as these problems have involved the sphere in which the economist's explanatory labors have lain, it has been reasonably assumed that his analytical equipment was the best available for arriving at intelligent answers to questions of economic policy. He has thus, on his own initiative or at the instance of statesmen or interested parties, been called upon to analyze concrete situations and to pronounce judgment concerning the probable results of contemplated new lines of action. He might also, of course, give his private opinion of the desirability of the proposed policies, but that is a different matter.

These explanatory and instrumental aspects of the economist's profession, though here described in the past tense and in terms perhaps more suitable to the views of what are known as "orthodox" economists, are aspects of economics which will be binding upon its professors and practitioners, whatever their theoretical differences. Some part of their activities and results, having no immediate ulterior object, will be comparable to the results of "pure" science; the other part, being concerned with the ways and means of attaining special

objectives, will be more of the nature of "applied" science. While these are terms to the traditional use of which I should not care to bind myself, it is apparent why, by way of analogy, they should attach themselves to the two-fold aspects of economics, as those functions have in the past been conceived. Historically, the scientific pretensions of economics have been mainly in the first field, or that of "pure" economics, and in this field the explanatory generalizations have been of a rather abstract character, achieved by a severe isolation of economic forces and a rigid use of logical deduction.

If one were to examine *all* the issues in economics, it would be necessary to inquire with some care into the controversial questions still pending within the traditional field of pure economics — into such matters, for example, as concepts of capital, and theories of wages, and the relation of utility to value. The differences are mainly of a conceptual sort, necessitated by a reassembling of facts or a readjustment of emphasis upon the forces at work. I should be the last to belittle the importance of these conceptual differences, since in dealing with complex sets of facts an adequate conceptual apparatus is the first prerequisite, and since our present stock of working concepts has developed out of past controversy. It is, however, mainly to this class of controversies that reference is made when it is predicted that many present controversies are to die unsettled. The reason for such a prediction is the belief that the center of theoretical interest has so completely shifted in the past generation as to gradually relegate these issues outside the center of attention. Some loss will doubtless accrue to economics by reason of this fact, but it will be bearable if economists can be brought closer to an agreement upon the remaining issues.

On recurring to the division of the explanatory and

instrumental functions of economics, it seems to be true that the most distinguishable recent trend of thought has been a tremendous increase of emphasis upon the latter function. This shift might have occurred without raising any serious controversial issues, simply by a shifting of interest from the more theoretical to the more practical issues of economic life. That appears to be a correct partial answer. The increasing complexity of economic life and a sense of inadequacy to meet the varied problems that it presents account for much of the emphasis upon a "realistic" investigation of its processes, that is, upon detailed descriptive and statistical analysis. This transformation might well have occurred without the accompaniment of any revolutionary change in the general terminology, concepts, or methods with which social facts had been analyzed or described, simply by a process of necessary modification and development.

The bewildering fact is, however, that an impressive change in social organization has been accompanied by a revolutionary innovation in scientific thought — that associated with the theory of evolution. Just as earlier economic thought was, in its effort to achieve scientific form, quite naturally impregnated with concepts borrowed from physical science, so more recent economics has been loaded with a biological terminology. The twentieth century was ushered in bearing the violently antithetical views of J. B. Clark and Veblen. A good deal of the subsequent confusion has arisen out of the partisanship which their ideas engendered. Both, of course, avowed an evolutionary position. That position was, however, alien to Clark's systematic thought, an addition rather than an integral constituent. Veblen, on the other hand, so exaggerated the bearing of evolution on economics that he rather fostered a smug con-

servatism upon the part of his intended victims. Out of this controversy has sprung much sterile discussion of what constitutes scientific method in economics. Our confusion has been thus double-distilled, arising out of fluid facts and fluid canons of scientific knowledge.

The shortcomings of the traditional economics have been displayed in detail and at length from time to time. The plaintiff's bill, while it has been remodelled or polished in various hands, has not changed in any fundamental sense since Veblen framed it nearly a generation ago. It accuses the so-called orthodox economists of clinging to an outworn philosophy, harboring an obsolete scientific method based on a mechanical analogy, appealing to an absurd view of human nature, and falsifying the institutional facts in the case. With whatever seriousness or frivolity the charges may be taken, one is presented with an adequate field of inquiry wherein to search for those non-scientific opinions which condition the thought of the older run of economists. It seems not to have occurred to any of these economists, so brutally set upon, to institute an equally searching investigation into the less apparent recesses of the minds of their assailants. This has apparently resulted from a mistaken view of the unimportance of the charges. And this, it seems, resulted from the obvious grossness and absurdity into which Veblen fell in framing them. Meanwhile, these insidious ideas have been leavening the whole lump of contemporary economic thought. The range of assent to the doctrines and methods of the older economists has been tremendously narrowed — to an extent of which they are probably unaware, because their books have only slightly been displaced in the universities as the approved sources of fundamental economic ideas.

One need not here go at any length into the positive

views of those who have come to be called "institutional" economists. They are such a race of free lances and prima donnas that in more skeptical moments one declines to believe in the existence of an "institutional school." Still, one cannot escape them. It seems reasonable to suppose that economists who disagree with other economists have what appear to them adequate reasons. It seems equally reasonable to suppose that they are men like other men, with like limitations and shortcomings. It seems entirely probable that they, too, have faiths and philosophies, ideals and conventional truths. Negatively, as has been indicated, dissident theory takes its stand that human nature is not hedonistic or mainly rational, and that the economic order does not correspond to any system of free competition; and that, as a corollary, "truth" achieved by those devices is spurious and untenable. Conceiving those devices to be the mainstay of systematic economic theory, some economists have been disposed to dump the lot of it out of doors, bath, baby, and all. It necessarily follows that a new type of economics must be based upon a currently acceptable general view of social relationships and a correct psychology; and, further, upon an intimate and detailed knowledge of the institutional structure and functioning of the economic order.

II

Taking up the last point first, as the easiest of which to dispose, it would be hard to find an economist who would dispute that this detailed knowledge is of the utmost importance to the advancement of economics — indeed, its paramount need. If that is so, the only controversy that could possibly arise on this point is a disagreement as to facts, or interpretation of facts. Facts, of course, are curious things. Josh Billings perceived

this when he said that it is not ignorance that causes so much trouble in the world, but people's knowing so many things that are n't so. Upon many facts, economists, no matter of what theoretical bias, are agreed, so patent is the evidence. The fundamental divergence appears in matters of interpretation, primarily over the question whether the massed facts lend themselves to analysis in terms of free private competitive action, with proper allowance for exceptional cases, or whether they do not.

Economists of the more traditional type, in advocating historical, descriptive, and quantitative economic studies, commonly refer to them as necessary supplements and correctives of the doctrines arrived at with the assistance of deductive analysis. Descriptive and statistical studies, in particular, are set down as the handmaidens, or candid friends, of theory, checking up on it, compelling its refinement and modification. But in the midst of this process the main body of theory stands inviolate. "Economics, there she stands." Similarly, historical or "genetic" studies are conceived as enlightening studies of origins, derivations, complex social relationships, trends, and possible future modifications of economic institutions, supplementing the efforts of the economist proper to analyze the current situation. Thus, Professor Taussig, with his customary catholic-mindedness, says:¹

The speculations and researches of the economists will turn in this direction no less fruitfully than to the familiar task of explaining things as they are. Both sets of problems must be taken in hand, and in both directions we may look for great advances, and eventually for an economic and social science far more profound than we can now boast of. . . . Needless to say, there is no opposition between the two, tho perhaps it is rare that the same individual is temperamentally attracted to both.

1. *Quarterly Journal of Economics*, xxxix, 13.

That has every appearance of a candid extension of the right hand of fellowship to economists of all sects and creeds, as it doubtless was intended to be.

That friendly proffer is, however, met with rebuff. For good "institutionalists" are not prepared to admit that their work is supplementary to and in harmony with the systematic theory of Professor Taussig or any of that brotherhood. They conceive themselves to be constructing something new to replace discredited logical structures. Nothing, perhaps, could make them more impatient than the notion that their task is in any way to be contrasted with the theorist's "familiar task of explaining things as they are," their entire *raison d'être* being postulated upon the ground that things are not as the orthodox theorists think they are. If anything is more unbearable to them, it must be the sort of condescending gesture of Professor Allyn A. Young in admitting them to the scientific fold as practitioners of "historical science" in contrast with "abstract science," or science "in a strict and narrow sense."² If one thing is more fundamental in the institutionalists' creed than anything else, it is that genetic social studies are merely instrumental to a proper understanding of "things as they are," their major task being not historical but contemporary analysis. They are not to be side-tracked into being merely supplementary to a spurious "abstract" or "pure" science.

To deal at all with the facts, that is, the detailed data, of social processes, it is obviously necessary to generalize, to develop concepts and construct inclusive categories. They are the indispensable tools of thought, and, if their content is subject to differences of opinion, the need for them is not limited to any particular type of theory. To classify is not, however, to explain.

2. Ibid., xliii, 7.

A human society in motion on a functioning basis calls for a statement of the impelling forces at work. These forces, to be intellectually manageable, must also be generalized. Economic analysis of whatever sort thus has, at least, minimum requirements for the use of abstraction, whereby certain aspects of the phenomena in view are laid aside as irrelevant to the inquiry that is being made. The third stage in the process of generalization, the explanation of certain generalized groups of effects by appeal to certain generalized groups of causes operating through certain generalized groups of institutional structure, unfortunately precipitates more serious controversy. When one contemplates the attempts made in this direction, it is quite plain that the earlier stages of classification and generalization have been influenced by certain preëxisting ideas in the mind of the analyst. It consequently appears impossible to explain, or to understand the controversial explanations of, economic phenomena by moving in a straight line from the detailed facts. It is equally impossible to ignore the facts and move straight from certain abstract causes. Theorists, of whatever sort, are engaged in tracing lines of causation, and the technique of their analysis is guided by certain external canons which color their whole apprehension of economic relationships.

There thus appears to be a fundamental argument concerning the uses and meaning of the facts. In detail and for specific purposes, facts appear to be enlightening to all alike. But when massed for the purposes of economic theory, they cease to be the same facts to all. Or, if the same facts, they are viewed from standpoints as diverse as those of the proverbial six blind men describing an elephant. Nothing can be more apparent than that the vast agglomeration of economic facts which have been assembled has no power to resolve the

fundamental theoretical differences. One must, then, go behind them to the canons of thought which are applied to their interpretation. That carries us back to the two topics which were laid aside some distance back, human nature and the nature of society.

By something more than a coincidence, differences in regard to the meaning of economic facts tend to run *pari passu* with differences of psychological and social theory. For the propensities of the human intellect and the nature of social processes are, of course, in their way as much facts as any others. But they are excessively elusive facts, and the inability of economists to reach substantial agreement concerning them leads to a distressing inability to fit more obvious and patent facts into the same mold. It is at the point at which they impinge upon the economist's analysis, as they necessarily do, that the door is open to opinion. It must be apparent how fragile the framework of economic science is when it is realized that its alternative forms are equally dependent upon sets of ideas, or points of view, which are not themselves scientifically established in any intelligible meaning of the word.

As has been said, the general dissident view is that any economic doctrine which depends upon an erroneous conception of human nature is thereby invalidated; and that most economic doctrines do so depend, with the obvious syllogistic conclusion. In their way, the dissenters find uses for deductive reasoning, however much they deride it as a vehicle for attaining economic truth. In this case, the argument centers around the minor premise.

There is, perhaps, little probability of any well-informed economist's denying that if any economic doctrine did necessarily depend upon a hedonistic view of

human nature it would thereby become untenable, so completely blasted is hedonism. It would be useless to deny, historically, that much of the shape that economics took in the nineteenth century was given it by men who entertained a hedonistic psychology. It was a component part of nineteenth-century rationalism. It undoubtedly affected the terminology in which they couched their economic analysis. As hedonism became suspect, the view developed that the substantial truth of economic doctrines was not dependent on hedonism. In consequence, economic theorists have recently been engaged in culling out or denaturizing all offending hedonistic terminology. The effect of this has been to deplete what is distinctly Jevonian in Jevons's economics and distinctly Austrian in Austrian economics, and to restore latter-day orthodox economics to a closer relationship with its Ricardian forebears. The "psychological school," suspected of hedonism, is inescapably in decline, so much so that J. B. Clark, so recently our outstanding theorist, reads like a voice from a remote era. In the hands of a recent interpreter like Professor Bye, its terminology has become, as Professor J. M. Clark says, simply tautological. In spite of this panic to escape from a sinking ship, the appearance of the doctrines has not much changed, and in particular the method of deductive logic by which they were arrived at is retained. The shift of ground, has, of course, been slightly less serious for those who originally pinned their faith to Marshall rather than to Clark. The recent disposition has been to say that this method is a fruitful one and these doctrines contain a substantial degree of truth, apart from any definite psychological view that may have been formerly used to bolster them up.

This naturally leads to the very relevant question, whether an economist can change his view of human

nature without changing his economic theory. In Professor Mitchell's view, an economist's conception of human nature is the most crucial test of his theory. He finds it inexplicable, for example, that Professor Fetter should at one period of his life promulgate a theory of value supported by hedonistic concepts, and a little later present the same theory of value dressed up in the clothes of volitional psychology. Nor does he see how other economists, whose subject-matter is the behavior of human beings, can argue that no definite view of human nature is necessary to the validity of their results. Mitchell's criticism is not lightly to be waved aside. His own conclusion is that, in their origin and in their nature, the majority of formal economic doctrines partake of a hedonistic hue, and that more recent disavowals are merely the protective gestures of men guarding their worthless treasure of economic generalizations, because it is the only treasure they possess. His remedy is that economists should acquaint themselves with the best accredited views of psychologists on the subject of human nature, and cut their cloth to that pattern. Concretely, this means the abandonment of all generalizations supported by shady psychological assumptions, and the piling up, by specialized studies, whether historical, descriptive, or quantitative, of a concrete body of evidence bearing upon the behavior of human beings in their economic relationships.

This is a view so relevant that it seems surprising how little has been written by way of refutation. One suspects that the objects of the attack were a little nonplussed, or else secure in their faith, like the respectable Christian before the attacks of the village atheist. Perhaps the best answer recently attempted is one by Professor Allyn A. Young, who says,

Economic theorists have often presented their doctrines as though they flowed from some first principle. But the first principle is gen-

erally purely ornamental, like the meaningless "desire for wealth." The real soundness of a system of thought depends upon its internal consistency and upon the accuracy with which it summarizes the pertinent facts of experience.³

Thus, Ricardo's principles do not fall in the face of an attack upon some putative psychological postulate. They have, or currently had, a real explanatory value, as containing the mature reflections of an analytical mind filled with an abundant fund of relevant knowledge concerning business practices and the economic problems of his day.

What this argument in its extreme form boils down to is this. Economic doctrines with shady psychological underpinnings are invalid, and cannot correctly explain economic behavior: versus, economic doctrines are valid to the extent that they generalize in enlightening form the facts of experience, no matter with what irrelevant psychological views they may be tinged by accidental association. Thus baldly stated, it is evident that the arguments do not meet on any common ground. They have no common term. The first argument tends to throw out doctrines because of psychological defects, without examining their explanatory value, while the second is based upon some obscure canon of what constitutes an enlightening generalization, which is not made explicit in the terms of the argument.

Economic generalizations of the orthodox sort do, beyond argument, depend upon an assumption that men do, within the scope of life included in the economist's view, choose rather faithfully those alternatives which inure to their personal benefit. Economic theory of the older sort is the logic of self-interest. Whether hedonistic or not, whether rational in all departments of life or not, the men in view are made, for the economist's

3. In *Quarterly Journal of Economics*, xxxix, 179.

purposes, to be quite actively rational in their pursuit of this world's goods. Otherwise, no one could contend that a deductively arrived at doctrine could be an enlightening generalization of experience. Modern psychology has tended to fasten its attention upon man's instinctive or other obscure propensities, with the result that those economists who most affect it tend to be more occupied with demonstrating man's defects of rationality than they are with examining its concrete manifestations. The distance between these starting points makes it doubly sure that the psychological arguments in economics shall not cross each other's tracks.

Without carrying the psychological argument any further, one may adequately perceive that, simply as an argument, it can never be either helpful or conclusive. About all it can do is to provide new points of view from which to examine various phenomena. Such varied points of attack may, if the problem be sufficiently confined in scope, provide enlightening knowledge. If, however, the exclusive authenticity of one psychological view be maintained, as commonly happens, the result is that before noted, an irresolvable issue. When this characteristic of the psychological issue is comprehended with sufficient clarity, economic theorists, of whatever sort, may be induced to reexamine their psychological positions, with probably desirable results.

The inconclusiveness of the psychological issues drives us on to that larger issue to which it is fundamentally related, the nature of human society. It has been too often pointed out to need repetition how incessantly recourse has been had to one of two analogies, the mechanism and the organism, in elucidating this subject. Without taking the time to inquire into the origins

of the contractual or "atomistic" view of social relations, it will probably not be denied that this influence was largely instrumental in giving to economics its general form. It was into this intellectual mold, the philosophy of natural law in a contractual society, that the economic facts to be analyzed and explained were poured. From the negative scheme of social salvation thus implied, it has been one of the recent problems of theorists to rescue economics. Since it is not now necessary to re-fight past battles, one may say that few economists could be found to support a general mechanistic view of society. Their support of the logical method of analysis that accompanied the earlier naïve acceptance of the analogy depends upon a much more modest belief — that freedom of economic action and a rational regard for personal self-interest are still sufficiently active forces in the world to lead to enlightening generalizations. About the only argument into which one can lead "orthodox" economists on this point is over the extent to which a quasi-mechanistic approach to economic phenomena, in individualistic terms, leads to valid or enlightening results. Meanwhile, economic doctrines of the broader sort depend upon such methods. They are remnants of an earlier philosophy and perhaps of an earlier set of facts.

Similarly, one need not bother with any extended historical account of the organic analogy. Its medieval and eighteenth-century manifestations have a historical interest, but this view of society has its present importance mainly in its association with the evolutionary doctrine. The importance of this doctrine in revolutionizing the intellectual apprehension of all social phenomena can hardly be exaggerated. Just as, a hundred years ago, economists handled their facts with the aid of a philosophical and scientific position which was

currently acceptable, so are present economists forced to do. Evolution is a goddess who must be propitiated. The act of propitiation has frequently taken the form of proclaiming society to be a true organism, a type of faith, however, more commonly encountered among sociologists than among economists. More commonly the organic view has been explicitly analogical, as a device for emphasizing the very complicated series of events by which our social organization has developed and the very intricate present relationships of its phenomena.

When this initial standpoint is accepted, from which to start an investigation of social phenomena, it is most difficult to delimit any special field for economics, so intertwined do the subject matters of all social sciences appear to be. One is faced by the startling prospect of having to deal with all knowledge. If, however, one is to insist on this starting-point and still be an economist, he is compelled to make the delimitation. Veblen attempted it with rather pathetic results, and no successor to his grandiose effort has appeared. Instead, recourse has been had to some common-sense opinion as to what things are economic, and the delimitation thus arrived at has not differed from the orthodox limits so much as might have been expected. That is to say, the field is mainly that in which pecuniary relationships prevail. Within this field, however, a different technique has been emphasized, that of minute investigation into detailed sets of human relationships, and the pursuit of these relationships over into adjoining fields usually regarded as the particular preserves of political scientists, jurists, psychologists, anthropologists, and so on. To say "labor," for example, is not a signal for reasoning about wages, but for a wide variety of studies into a certain type of industrial relationship.

No one, as has been said, would doubt the usefulness of these detailed studies. The argument arises when it is maintained that this is the sole avenue to truth concerning the complex aspects of economic life. That attitude is a conventional truth arising out of the organic approach, which brushes aside deductively arrived-at economic generalizations because they start from hypothetical positions instead of from an intimate knowledge of the facts. It thus bears the same relationship to orthodox economics as the psychological protest outlined some distance back. Since it is no longer customary for economists to hold to either mechanistic or organic analogies except as convenient devices for assembling and analyzing complex data; since human society is generally considered to be a thing *sui generis* whose processes of movement, growth, and change are not to be described in terms of any other body of knowledge; the only reasonable argument between those addicted to one or the other analogy is whether or not, in the light of the facts, economic generalizations lack supporting evidence.

Before considering the merits of that debate, it may be of interest to note the divergent possibilities inherent in a strictly developmental interpretation of social phenomena. The evolutionary process may, for example, be considered blind, brutal, heedless of the individual, just as the individuals involved may be the sport of compelling instincts which are without meaning except that they are the outgrowth of the past experiences of the race. Such is Veblen's position, usually. On a strictly biological analogy it is perhaps the most relevant view. Or the evolutionary process may be supposed to contain within itself an inherent purpose or end, as displayed in attempts to harmonize evolution and theology. Or society may be personalized and

made to have ends or purposes of its own, not fixed, but shifting with the change of outward circumstances. This is Hobson's view. Or the individuals, or groups of individuals, making up a society may be deemed to have tentative and shifting purposes of their own, out of which derive those lines of general change which are called social. And in the latter case, more or less influence may be attributed to the impulsion of instinctive traits or to the planned outcome of the rational faculties. I go so far afield into these philosophical attitudes only to indicate that those economists, with an evolutionary bias, who have been so scornful of the "preconceptions" of earlier economists, are themselves faced with the necessity of adopting positions the actual correctness of which is quite as incapable of proof. The organic concept has, in indiscriminating hands, been perhaps the most fruitful source of confusion in social theory.

In a world still sufficiently mysterious to have provided us with no ultimates or absolutes, it is necessary, before progress can be made in any line of thought, that those engaged therein should agree upon a certain stock of common sense, should take certain things for granted. Unfortunately for our peace of mind, there is a choice of attitudes toward the general structure and functioning of society, and it is perhaps that fact more than any other which blinds and bewilders us in current economic thinking.

III

If I do not misinterpret the younger American economists who adopt a primarily institutional emphasis, they insist upon as accurate a psychology as is available; they insist upon a "realistic" as opposed to a "normalizing" treatment of facts; and they in the main

adopt the last of the alternative evolutionary attitudes which were mentioned above. It is this last, the least scientifically defensible part of their intellectual equipment, which seems to me to dominate their whole position. Eschewing any true organismic theory of society, they concentrate on purposes, deeming aims or ends to be the dominant factor in the actions of the individuals or groups of which society is composed. They also, for the most part, hold that these aims represent desirable ends to those who entertain them; but that, since society in the large must accomplish a *modus vivendi* for all its parts, it must of necessity perform acts of choice, by informal or organized agencies, as to what is permissible; and that such social choices are dictated by some scheme of ethical values. Going further, they are convinced that the nature of these ethical choices has been but little recognized and that they have been rather haphazardly made. A more self-conscious recognition of the process will permit society more deliberately to choose its ends, more effectively to plan its course toward them. The reaction upon the economist is that he should be highly conversant with existing social purposes, constructively critical of them, intimately aware of the present effects of social forces in detail, actively concerned with possible alternative ways and means of achieving present or alternative social purposes. Or, if this seems a large order for an overworked economist, then that this should be the field within which economists may develop the division of labor. The fundamental problem is the same for all the social sciences, and the work of economists must dovetail into, and in some degree depend upon, the operations of their fellow-workers in other fields of labor.

This, as I understand it, is the philosophy of "social control." There may possibly be no better social phi-

losophy. But I should like to insist that it is a philosophy, quite as much so as "the system of natural liberty." Perhaps it is no more than a latter-day rendering of the Utilitarian credo, "the insistence on judging institutions by their results and treating them as tools for the furthering of social purposes," as Professor J. M. Clark has put it.⁴ It is merely relieved of the particular Benthamite expedients. Plainly, this philosophy posits a high capacity for rational human action, and comes at that point into conflict with a contrary tendency to minimize the rationality of mankind. There certainly is little consistency to be found within a scheme of thought which criticizes one kind of economics for an unseemly insistence upon human rationality, and thereupon constructs another making quite as great demands upon the rational faculties. A further aspect of this philosophy of social control is that it is fully acceptable to many proponents of traditional methods of economic analysis, which they regard as providing part of that light necessity to illumine the path of the future. Whereupon we are thrown back upon the whole preceding argument.

This mental attitude which I have been examining has an important bearing upon the whole purpose of economics. As orthodox economists gradually divorced their discipline from precepts of public policy, they tended to set their findings up as a "positive" science, relieved of association with troublesome questions of what ought to be. Whatever their personal feelings, they were, as economists, rid of rights and wrongs. One criticism of this attitude is of the sort made by Hobson, that in displaying the principles of order which they find in the existing economic system they tend to become apologists for that system. One could cite suffi-

4. In *The Spirit of '76 and Other Essays*.

cient examples to give cogency to that criticism. It is certainly not, however, a necessary consequence. It is quite as probable that they would find institutional furniture in need of mending. The more serious objection, arising out of the social control philosophy, is that social purposes are of the essence of the economist's problems, by reflection from human nature and from the necessity of mapping out public policies. The economist, whether or not he is a practicing moralist, must assess the purposes of his human raw material.

The problem is one that may be side-stepped by an economist who marks off his field as an analysis of the logic of acquisitive practices under private enterprise. Professor Davenport, for example, by strict delimitation of his subject-matter, avoids it. But when it becomes necessary to cope with problems of national or social economy, like a tariff system, or a banking system, or a system of taxation, or a minimum-wage plan, the question of social purpose is inevitably involved. Assuming a given economic order, and then taking these problems up in isolation, a hypothetical account of economic effects can, of course, be presented, unweighted with ethical considerations. When, however, the social order in the large, including the economic order, is conceived to be simply a complex of such problems, and when current business practice is as readily to be weighed in the scales as the current tax measure, the item of social purpose really dominates the scene. This is the point, one supposes, which Professor Commons, in his obscure way, is trying to make in *Legal Foundations of Capitalism*. Mr. Hawtrey in *The Economic Problem* and Professor J. M. Clark in *The Social Control of Business* are concerned with the same question.

In the type of thought that is being here considered, it is evident how strong an emphasis is being put upon

what has been called the instrumental function of economics. Indeed, if the position be pushed to its extreme limits, the explanatory function may be made entirely subordinate to it. The economist who so regards his discipline has, however, implicated himself in a strictly philosophical position, the correctness of which is quite undemonstrable. The conclusion is not to be drawn that his work is thereby stultified, but only that in his scrutiny of social phenomena he is subject to limitations of human knowledge not substantially dissimilar to those which affected the work of Adam Smith or Ricardo or Karl Marx. Plainly, those ideas which show the hardest qualities at the present moment are such as have a peculiar relevancy to current problems. Ought they not to be cherished strictly for what they are, and not put forward as the putative basis for an entire reconstruction of scientific technique in economics?

IV

When one casts a backward glance over the issues that have been raised, it becomes apparent that the streams of thought which have been considered do not run parallel and distinct courses. There is, for example, no exclusive line from the evolutionary viewpoint to institutional preconceptions to social control, running parallel to a line from mechanism to economic laws to a "positive" economic science. It is possible to start from the evolutionary postulate and arrive at such diverse destinations as a blindly mechanistic or a beneficently purposeful social process. Or one may subscribe to the philosophy of social control without abandoning a belief in the quasi-mechanistic methods of orthodox analysis. Or one can be an institutionalist without subscribing to social control, or a behaviorist without discarding all generalized economic doctrines. The possible com-

binations and permutations of ideas are sufficiently numerous to reduce economic theory to absurd chaos, if many of them are dogmatically held. The present task for economic theory, so far as it is concerned with house-cleaning, is to consider its stock of general ideas and assess their usefulness for whatever legitimate functions economics may be expected to perform.

It is perhaps permissible to suggest that the general ideas which are the stock in trade of any particular economist are liable to be mainly fortuitous. By education and training he will have absorbed them. In contact with his environment he will have observed and become peculiarly interested in certain types of economic activity. He will be working with special sets of facts and with a special set of ideas, and, when these collide with other sets in other hands, the very tenacity which marks strong minds will be the occasion for disturbing the serenity of economic science. In the midst, however, of these disturbing currents, there stand out certain canons of thought and knowledge, which, if fortuitous, are less directly and personally so, and which may be considered binding upon all thoughtful persons in their generation.

As has been said, the only continuing importance of mechanistic and organic analogies in economics arises from the suggestions which they offer. About the only remaining aspect of the mechanistic view to occasion any marked difference of opinion is the extent to which logical deduction may lead to economic knowledge. There would be found few to deny that in certain types of analysis, as for example the probable effects of a new tax or of a new discount rate, a skillful use of deduction, proceeding from relevant facts, is the principal path to knowledge, and that in this restricted sphere of analysis it is necessary to proceed as if the economic system

were mechanistic. Unless for specific purposes and under specific conditions the reactions of men to particular stimuli are substantially uniform, there can be no economics, either as science or as art or what you wish; there can be no social explanations, no social planning, no social control. The only question that arises is, how far this method may properly be pushed.

On this point it is my opinion that, far as economists have retreated from their earlier pretensions of formulating scientific laws, they have not retreated far enough. Too complete systems of economic doctrine have a way of becoming transmuted into social philosophies. Or perhaps it would be better to say that the construction of a system of sweeping generalizations cannot be begun except upon a foundation of assumptions more definite than the facts will support. Professor J. B. Clark's work is the outstanding recent example of the characteristic tendency of logical tools to lure their user to untoward lengths. But systems achieving less simplicity than Clark's are suspect. Marshall, for example, while he remains to me "the master" in the art of clear and cogent reasoning, goes beyond my powers of comprehension when he can isolate from the complex of social processes his economic "solar system of symmetry and balance." The same mental reservation is held toward all economists who extend their theory of value into the field of distribution in such a way that the whole situation is nicely articulated, with all the corners tucked in.

One should certainly have no quarrel with the general method of hypothesis and verification. Its uses in many fields of scientific investigation have been too fruitful to permit its abandonment as a method. One need not quarrel with doctrines of value under hypothetical conditions, so long as the hypothetical char-

acter of the situation is kept in view, and so long as the concepts and methods used are such as to be of service in some concrete and particular circumstance. One may, for example, tolerate Marshall's solar system for the sake of his analysis of costs. But when economists, swept on by the magic of deductive logic, ask us to believe that their hypothetical symmetries are somehow the real world, one falters and halts. A little too patently they are re-embroidering obsolete systems; a little too cavalierly they are disposing of uncomfortable facts; not quite plausibly enough they are violating one's fundamental views of social organization. They are reshuffling a worn pack of cards.

The impulse to generalize widely in economics is presumably an aspect of that scientific faith by which science has lived and prospered — the faith that a natural orderliness inhabitates the world of phenomena, the controlling laws of which are the object of the scientific quest. It is a faith that few dare quite reject. Whether or not it be a true faith, it has led economics into shortcuts to knowledge *via* the path of logical deduction. Physics may advance by abstracting from the qualities of time and space. But even physics has lost its earlier certitude and has become implicated in problems that demand a revision of its discipline. Certainly in economics it is no longer possible to derive from competition and self-interest a general path to the laws of economic order. The institutional facts do not permit it, our psychological knowledge does not permit it, our conception of social processes does not permit it. The plausibility of such a performance is dying by reason of the obsolescence both of the facts which gave rise to it and of the intellectual concepts with which those facts were handled. Either would have presented a bewildering problem for economics. The combination is by way of definitively recasting the nature of economic science.

In recent years there has been proposed a variety of new "approaches" to economics, many of which are sufficiently related to one another to be subsumed under the general heading of "institutional." It is, however, far from apparent that any, or all, of these so-called approaches constitute a satisfactory alternative to older methods of economic analysis. Some of the approaches, for example those described as "functional," "welfare," and "price," have no particular message as to methods of analysis, and indicate merely a certain personal interest from the angle of which an economist may elect to view his phenomena. The "psychological" approach, as recently conceived, has perhaps been mainly a weapon of negation, used to demonstrate the errors of the earlier "psychological school." Positively, it has induced a number of interesting studies of the sort of which Carleton Parker was a forerunner. But it tends to subdivide, and between volitionalism, instinctivism, and behaviorism, the layman is apt to be left gasping. Salutory in a cathartic way, its main importance appears to be as a link in the general argument for an institutional economics.

The "descriptive," the "genetic," and the "quantitative" approaches constitute the ensemble which, with a dash of psychology and a pinch of "functionalism," is comprehended under institutionalism. Taken separately, all are of ancient and honorable origin. Their position in economics has, historically, been important but subordinate. Banded together, they have not merely staged a revolt from slavery, but essayed an attempt at mastery. That they should have come to exaggerate their merits is perhaps but the natural outcome of release from restraint. The present vogue for these types of work, particularly of quantitative analysis, is so great and its results so valuable that it tends,

in America, to discount or obliterate the services of older methods. It tends also to suppress an altogether desirable activity in the field of theoretical discussion. It creates a fictitious appearance of an era of good feeling in economics, which masks the reality of active differences of opinion.

The future province of economics is to be determined by a sifting-out process, and any progress can come only by the elimination of the prevailing dogmatisms, through a process of discriminating thinking. Such a process will, of course, entail sacrifices. Economists who find peculiar virtues in behaviorism might find that, with the bloom of novelty rubbed off, its practical helpfulness was somewhat mitigated. Those who emphasize the instinctive basis of human action might rediscover the rational qualities of the human mind. Those who emphasize the organic character of human society might be led to comprehend those problems where a quasi-mechanistic view is the principal path to knowledge. The advocates of social control might appreciate that individualism is itself a philosophy of social control, and that their practical problems are mainly limitations upon this established principle. Those who emphasize the importance of detailed institutional studies as the path to understanding, as well as controlling, economic processes, might discover that they do and must give coherence to the whole by reasoning about it, and by assuming that others reason. A descriptive account of institutions is essentially passive. It is the force of human motivation passing into them that makes them active, and to depreciate the rational quality of much of that motivation is to ruin the picture. As someone has said, one feels the wind, but analyzing it, finds only air. Descriptive studies give us the air, not the wind, of economic life.

On the other hand, there seems no reason why ambitious systems of economic doctrine should retain for the contemporary mind anything but an historical interest. They appear to be a phase almost passed. Marginal utility and productivity doctrines are almost universally suspect. They simplify too heroically and assert too unverifiably. Why value theory should be the magnetic center of economics is no longer apparent, when interest in prices centers around specialized inquiry into various types of the price-making process. The fact that prices constitute so pervasive a directive force in the allocation of human energy is certainly no reason for tracing them to fictitious or merely partial causes, and endowing them with a doubtful normality. Were orthodox theory to submit itself to such painful major operations, the essential and irreplaceable functions of the deductive method would be plainly apparent, untainted with results which place too severe a strain upon the contemporary imagination.

Orthodox economists in general now see their discipline mainly as a set of tools for examining concrete facts, their wider generalizations being only convenient aids to the understanding of the forces at work; while institutional theory strikes them as a vague sociological concept. Institutionalists in general see orthodox economics as a tissue of unverifiable generalizations based on probably incorrect premises; while their own general ideas, which they consider to embody the most approved current views of psychology and social theory, form merely the background for specialized investigation, through which alone real enlightenment is possible, either for knowledge's sweet sake or for wise economic policy. In this situation the arguments as to facts, as to human nature, and as to social theory proceed, as I have shown, upon two levels, so that the points at issue never squarely meet face to face.

The situation is not remedied merely by saying, with Professor Young, that the mechanistic and organic analogies are supplementary rather than exclusive; or by creating complementary "abstract" and "historical" sciences within which the scientific fold may encompass economists of whatever type. No generous eclecticism can be substituted for a careful scrutiny of the ideas being utilized in economic analysis; or for sophisticated discrimination between what is hypothetical or philosophical and what is actual and verifiable. There is evidence, in a growing loss of strong conviction among older economists and a growing refusal to be disciples among younger ones, that this pruning process is making headway. Its progress should sufficiently relieve our minds of footless controversy over imponderable matters to permit us to go about our specialized tasks, from many angles and with diverse purposes, in a more equable frame of mind. It would be a pity, were the education of economists to be so defective that they were unaware of, or so specialized that they were not interested in, the types of social theory about them. It is equally a pity that they can now be trained in half their field and be thought complete, and that they can so ingenuously embody debatable philosophical positions among the scientific essentials of their work.

This projected removal of economic controversies through a process of sophisticated thinking may appear to some to involve results too drastic. If it perchance outlaws most of our more ambitious doctrines, what, it may be asked, has become of the "pure" science of economics? Probably we concern ourselves too much about the scientific pretensions of doctrines. Generalizations depend for their validity upon their verifiable relationship to the facts which they purport to explain. When that relationship appears to change, as it may under a

changing of the external facts, or when it no longer appears credible, as may occur from changed views of human motives and social relationships, one must, however reluctantly, dispense with the generalization. The more modest pretensions of "pure" economics may be compensated by a more detailed and accurate knowledge of our economic environment, and by the development of a more varied and comprehensive technique of analysis for such matters as attract or demand our attention. What we want and need to know are usually fairly explicit things. The English, for example, wished to know in advance the probable economic results of the return to gold. That was a problem for deductive logic, based upon a detailed knowledge of relevant facts and relationships. They may also wish in retrospect to analyze the results. That is primarily a problem in quantitative analysis, supplemented by other intricate data. No amount of descriptive economics could change the nature of the former problem, and no amount of orthodox economics could change the latter.

The decline of "pure" economics in no way narrows the field of what has been called, earlier in this paper, the explanatory function of economics. A doctrine is not obsolete so long as it credibly fulfills that function. And if it is replaced by no other doctrine, but by a more intimate knowledge of our environment and its processes in detail, that may properly be considered a "scientific" advance. It is not, however, probable that many economists now suppose that they are accumulating knowledge for the mere sake of knowledge. Recognizing the instrumental aspect of their discipline as its primary aspect, they will lament the less the depletion in the current stock of economic laws.

On this view, economics will continue to be a body of knowledge, less generalized, more detailed. It will con-

tinue to be occupied with animating forces, less simplified, and with processes, less normalized. Its technique will not be one, but many. It will be tested by its ability to gather relevant facts relating to our business and industrial system, to analyze them and extract the fullness of their meaning for whatever purpose is held in view. Its scope will be indeterminate, by reason of the necessary connection of economic matters with the matters more particularly regarded as legal, political, ethical, psychological, and philosophical. Its purpose will be equally indeterminate, since it will be available as knowledge and technique, to serve such diverse purposes as animate individuals, groups, and governments. Whether it will be thereby more or less "scientific" — what does it matter? The day is quite past when economics need test its scientific character by analogy to some extraneous discipline. Why need we lament that we cannot achieve a law of gravitation? Planets are not corporations, nor are persons either atoms or cells. Our subject-matter is human beings and the groups they form, the aims they set up, the social devices they invent, the lines of action they pursue. The subject-matter is unique, and the scientific problems equally unique. Our scope, methods, and purposes in economics must be sufficiently comprehensive to provide a technique as varied as the subject-matter requires.

To some such situation the sweep of events has brought us. A certain range of tasks, indistinctly defined, is presented to economists, the performance of which will promote the intelligent understanding of contemporary social life, or assist in the intelligent formulation of policies. Meanwhile, theorists ride their hobbies too hard, arousing controversies and creating *impasses* which neither external facts nor the contemporary canons of knowledge warrant. That intelligent men

should all see eye to eye is not to be expected, least of all in so complex a field as the operation of social forces. It was inevitable that the impact of recent novel ideas in the fields of scientific and philosophical thought upon the entrenched position of older views should be felt in the field of economics, as elsewhere. Great is tradition, and great is novelty. We appear, however, now to have arrived at a sufficient stage of sophistication in economics to permit us to relegate much of the old to the lumber-room, and to assess the useful qualities of the new.

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PARITY IN THE EXCHANGE OF FUTURE MONEY AND FUTURE COMMODITIES

SUMMARY

The problem and its relation to the supply and demand control of rates of exchange involving future goods, — I. Comparative values of futures and spots in relation to available supplies from crops, 368. — A future trade is an exchange of future money for a future commodity, and does not involve present goods, 370. — II. Indications of a downward bias in grain and cotton futures call for explanation, 372. — III. Böhm-Bawerk's theory of a discount on the future is quite another matter, 375. — IV. But a difference in the relative valuation of money and any specific commodity may be expected according to whether the comparison pertains to the present or to the future, 377. — This situation as expressed in terms of mathematical inequalities, 379. — V. Commercial experience and observation of the comparative value of "immediates," 379. — The downward bias costly to hedge sellers, 383. — VI. Conclusion, — The present article calls attention to a neglected condition, and perhaps suggests a needed addition to theory, 385.

THE special topic or problem under consideration in this paper is a certain real or apparent distortion in the ratio of exchange between present commodities and future commodities, as represented in their comparative prices. This distortion is of a nature not explicable by interest cost or by a "discount on the future." The latter phrase has an unfortunate verbal relation to the description of the phenomenon here considered, which may easily mislead the student of futures markets. The purchase of a future contract on an exchange does not amount to an exchange of present for future goods; transfer and payment are effected only when the contract matures.

No attempt will be made to consider whether trading in futures performs an economic service. Obviously a well-established futures market is thoroughly specu-

lative, and a thoroughly speculative market may be different from one that is not so, and in ways that affect serviceability. It is relevant, for example, that most of the transactions on the Chicago Board of Trade are made by persons who have no practical interest in actual grain. But it is not within the scope of the present paper to discuss the problems thus raised.

Moreover, it is not the purpose herein to study the peculiarities of supply and demand as they operate in a futures market; or at all events no comprehensive study of that kind is offered.¹ Some reference to the general features of a futures market is necessary; but for the special problem in hand, it may be assumed that a market for the purchase and sale of futures is governed by the same general economic forces as any other market. A commonplace way of making this general statement is to assert that the law of supply and demand controls. Supply and demand do control; but there is occasion for special attention to elements of supply and demand that are peculiar to a futures market or especially important in it.

Finally, to refer again to a point already touched on, the subject-matter of this paper is different from that of the general theory of a discount on the future as elaborated by Böhm-Bawerk and his followers. None the less, it is of interest to consider the resemblance and analogies to this line of reasoning, if only to prevent misunderstanding; and something will be said on this side of the problem.

1. Volumes V to VII of the Federal Trade Commission's Report on the Grain Trade deal exhaustively with various aspects of grain future trading; vol. V with the technique of future trading operations; VI with prices of cash grain and futures; and VII with effects of future trading, and certain conclusions. These may be regarded as background for the present paper. References to especially pertinent matter in these volumes are contained in following footnotes.

I

THE VALUATION OF FUTURES AS A QUESTION OF
DEMAND-AND-SUPPLY CONDITIONS

An exchange of present for future goods at par should not ordinarily be expected. For industrial and commercial reasons a premium on present goods is normal. Interest is charged and paid. The technological possibilities mean an objective difference in demand-and-supply conditions, as between the present and the future; and this difference may be presumed to be generally in the same direction, tho the advantages of immediate possession may sometimes, for individuals in particular situations, be entirely counteracted by other factors, which it is not necessary to consider here.

The theoretical test of the question whether present and future normally exchange at par is not entirely satisfied, however, when the possessor of present goods has certain objective advantages which one who owns and controls future goods has not. Futures as traded in on the speculative markets — where exchanges of future goods or rights take place under commercial and competitive conditions — may offer the opportunity to determine in part how far objective differences and how far subjective factors account for the valuation of the future. It is necessary to consider somewhat this general situation before dealing with the special topic of this article.

The buyer of September wheat in April obtains the wheat in the delivery month specified, which is five months ahead. Meanwhile he has no cares or responsibility as regards the contract, except so far as his broker may require him to put up and keep good some small fraction of its value as a margin, that is, as security for his meeting the obligations of the contract. His re-

sponsibility is substantially only that of a purchaser in September for immediate delivery; he has to take and pay for the grain at that time. He does not have to store it during the intervening months. The seller of a future is in these respects in a position like that of the buyer. The task of the seller is more difficult only in so far as it may be harder to get the kind of grain needed for delivery than to get the money to pay for it.

What considerations will operate upon the minds of buyers and sellers of futures, affecting their disposition to make the contract in question? Obviously, such considerations relate to the present situation in regard to supply and demand as compared with the prospective situation in regard to supply and demand at the maturity of the contract.² A purchaser of Chicago May wheat in October will consider how much of the crop will be left in May and what will be the character of the demand at that time, or at such other time as he may look forward to as appropriate for the closing of his contract. The seller will presumably form a somewhat different judgment on the same subject.

Purchasers of September wheat in April, however, will value the future in comparison with the spot commodity very differently from purchasers of May wheat in October. Between April and September a new crop of wheat comes on the market. Between October and May supplies available at Chicago are obtainable only from the diminishing stock of the old crop. Wheat available in May has been carried by someone till May, and, unless a mistake of judgment has been made by those who carry the actual wheat, they will receive

2. In fact, of course, either buyer or seller may cancel his responsibility by a contrary transaction in the pit; but it is permissible to assume for purposes of illustration that this will not happen, since whether the contract is held to maturity or not will not affect the facility with which the particular trade is made or the responsibility incurred while it remains open.

more or less compensation for performing that service. The May future in October will, therefore, normally sell above the price obtained in October for actual wheat in the same market and of the same quality as that which will be delivered on the future contract.

The change occurring between April as the date of sale and September as the date of delivery is different in character, tho not different in relation to the operation of supply and demand. Wheat for sale in Chicago in September is new wheat coming to the terminal market from the country in maximum volume at about that time. The spot wheat available in May will ordinarily bring a higher price before new wheat is available, and will presumably, in order that its owner may get the benefit of relative scarcity at that season, be sold at such higher price before the new crop is available in quantity. The sale or purchase of September wheat is a transaction relating to new-crop wheat. Unless a very short crop is expected, the spot wheat in April will sell considerably above the September future in April. Both the May wheat and the September wheat transactions referred to are made, as need scarcely be said, at prices controlled by considerations of present and prospective supply-and-demand conditions.

In such examples it is rather natural to assume that the future grain is bought and sold for present money. In fact, the future contract is future as to both the grain to be transferred and the money to be paid. Neither transfer nor payment occurs until the delivery month.³ The goods exchanged (including money among goods) are at neither end present goods. Both the money and the wheat are future goods. This fact makes the price

3. Any margin deposited with the broker is not part payment for the grain, since the seller is equally expected to deposit a margin; and in fact no deposit may be required of certain traders until the market goes against them.

of futures not directly available as a test of the effect of futurity, as such, upon valuation.

If it can be assumed, however, that the value of money does not change between the two dates (of contract and of transfer, respectively), or even merely that actual trades will assume no change, then present and future goods can be compared by way of the spread between spot and future prices through the application of rules or proportion by way of the intermediate or money term. In other words, if the price for the contract grade of spot wheat in October is \$1.00 per bushel and the price of May is \$1.04, then the rate of exchange between spot and future is shown to be as 1 to 1.04. It should be noted that the money terms in this proportion are as of different times, the one being present money and the other future money. The assumption implied in such a method of comparison is merely that the yardstick is the same in length when the future becomes the present, not that a future dollar is worth the same in the present as a present dollar. By such a comparison as made above it appears that future grain is worth more than present grain in October, the result being the opposite of an undervaluation of future goods. In April, on the other hand, September wheat will sell at something like 91 cents with spot wheat at \$1.00. From the October-May example, however, it is evident that demand-and-supply conditions may give to future goods a value in excess of present goods, tho doubtless the reverse situation holds in general.

The speculator cannot afford to buy the low-priced and sell the high-priced future under any general rule. At different seasons he is looking forward through very different intervening developments as regards demand-and-supply conditions. If he is trading in January, for example, unless he is an ignoramus, he will not buy

Chicago July wheat merely because it is cheaper than Chicago May wheat; buying in October, on the other hand, he will normally be willing to pay more for May than for December, unless he feels that a bull movement is on, which will have spent itself before May, or that December is cornered. He will apply no general rule to deferred options, at least unless the comparison relates to but one crop year. Even where both options relate to the same crop year, however, he may believe that the near (especially the maturing) option is controlled by temporary and "technical" market conditions, while the deferred option (with an adequate volume of trading) shows comparatively normal value.

II

THE FACT AND THE PROBLEM OF A DOWNWARD BIAS IN FUTURES

Ratios of exchange between the present (or immediately prospective) and the future may be obtained by comparing prices for two options maturing at different times, better than by comparing spot and future.⁴ Such comparisons, for two options traded in at the same time, are likely, for example, to show September at about 2 cents below July wheat; December about 2 cents above September; and May 4 cents above December. While these spreads in fact vary greatly, the variations do not affect the validity of the general statement. Grain for delivery earlier in the crop year is valued at less than grain for delivery later in the crop

4. Possible doubts as to the equivalence of the spot-grain price with that of grain to be delivered on the future may be thus avoided, since differences of quality should affect all futures of the same grain and exchange in substantially the same way. The possibility of an effect from the variation of the quality of the wheat (as regards moisture content especially), according to the season in which it is delivered, is of technical interest but not of practical importance in the present connection.

year, as traded in ahead of the maturity of the options compared.

The most interesting result of such inter-option comparisons appears, however, when May contracts are linked up with contracts for later delivery. With spreads between the other options running as indicated, it appears that Chicago May wheat will sell 6 or 7 cents above wheat futures for delivery in the following July.⁵ It appears, therefore, that starting with the May price at \$1.00, by way of illustration, the step to July brings the price to 94 cents, to September to 92, to December to 94, to the next May to 98, and so on.⁶ The illustration used might be made stronger than it is. It should be noted that the results obtained are based upon averages, and do not imply that in a particular year the price, in running the gamut of the options from May to May, ought to get back to its starting-point. Chicago oats and corn futures show the same tendency as Chicago wheat.

The general results of such a comparison, as well as of analysis of the behavior of the cash-future spread, point to the conclusion that futures markets exhibit what may be called a downward bias. They tend to put a price on the futures that is below a proper parity with spot grain (and spot cotton); also on the more distant futures as compared with the near futures.⁷

5. Of course, all these spreads are based upon transactions at the same time for both terms of each spread. The different spreads relate to different, tho often overlapping, trading periods. It may be well to note that the spread between two options is tolerably constant during a period when both are being traded in in considerable volume.

6. This sort of analysis is made in chap. 9 of vol. vi, of the Federal Trade Commission's Report on the Grain Trade, pp. 212 ff., where inter-option spreads are examined at some length, and also, especially for oats and corn, in vol. vii, p. 212.

7. See chap. 10 of vol. vi of the Federal Trade Commission's Report on the Grain Trade; chap. 9, especially sections 3 and 5 of its Report on the Cotton Trade, Part 1 (1924); and vol. vii of the Report on the Grain Trade, chap. 6, section 4.

The evidence of a downward bias in futures, however, should not be taken to mean that there are never premiums on futures (the cash commodity then being at a discount), but only that the carrying-charge premium, which is normal for certain seasons, is seldom equal to the "full" carrying charge and is often completely counterbalanced.⁸

Is there any general economic principle, or any general trait of human nature, which should lead one to expect such a downward bias of futures? Is it relevant to say that men in general are lacking in prudence, and that business transactions may be affected by this fact? Even if this be true of most men, including business men, this does not seem to be a sufficient reason for a disposition on the part of speculators in futures to sell short at better terms for the *buyer*, than those given to a *seller* when speculators go long of the market. Why should the buyer of futures in general tend to get the better bargain?⁹

8. Actual discounts on grain futures at times when premiums should appear were evidently rare in the eighteen-nineties. Cf. vol. vii of the Grain Report, p. 211. Why they are conspicuous twenty and thirty years later is a question to which some attention has been paid in the sections previously referred to. It is of interest to note that a recent English student of futures (J. G. Smith, *Organized Produce Markets*, especially pages 141-142) recognizes the fact of a downward bias in cotton futures by offering an explanation, which, however, appears to the present writer quite inadequate.

9. It costs no more to hold a bought future open than it does to hold a sold future open; the slight interest cost involved in putting up a margin may be disregarded. The cost of carrying actual grain is, of course, important, and it affects the buyer of actual grain who holds, but not the long speculator in futures. Holding actual grain as a simple speculation, in preference to buying futures, can be justified only when the cash-future spread shows a large premium on the future; and hedging elevators head off any such development. A discount on the futures, however, abstractly considered, should encourage long speculation in them. In fact, the spot commodity is frequently held under hedge with reference to an expected development of a premium for the particular quality — a practice known in the cotton trade as "speculation in basis." The "basis" is the premium over the future paid for a particular grade and quality of cotton.

III

BÖHM-BAWERK'S THEORY OF A PREMIUM ON PRESENT
Goods

The theory of Böhm-Bawerk regarding a rate of exchange between present goods and future goods, according to which the latter are regularly valued at less than par, is familiar to economists. It is offered primarily as an explanation of interest on capital and the interest rate. Böhm-Bawerk¹ finds that the premium on the present rests on three grounds: (1) the relation between need and coverage at different times, most persons acting most of the time on the presumption that wants will be better provided for with the lapse of time; (2) the tendency of each person systematically to underestimate his future needs and requirements; (3) a general preference or higher valuation for present goods on technological grounds as means for the satisfaction of wants, because they can be utilized as means to produce larger supplies.

Subjective are mingled with objective grounds in this enumeration, the third ground being distinctly objective. Since, according to the Austrian theory, of which Böhm-Bawerk is one of the founders, objective or exchange value is always based upon subjective value, this point is not brought forward by way of objection to the theory. What is significant for present purposes is the possibility that some sort of subjective factor might be theoretically sufficient to account for the entire range of phenomena under consideration without any direct, reference to objective factors. Even if the subjective undervaluation of the future be considered of much less

1. Kapital und Kapitalzins, Zweite Abteilung, Positive Theorie des Kapitaless, pp. 426 ff., "Gegenwart und Zukunft in der Wirtschaft." The edition referred to is the third in German, Innsbruck, 1909.

general and decisive importance than objective factors, this propensity of human nature would seem to have a bearing on the comparative prices of cash grain and grain futures.

The application of such a theory to the explanation of discounts on futures as compared with cash prices is, however, not direct. In the future contract the payment for the goods, as well as their transfer, is postponed. Both terms of the exchange are future. If discounts on grain and cotton futures are to be explained by some characteristic of the process of subjective valuation, it must be because there is a tendency to discriminate in the judgment of value as between future commodities and future money. Is there in fact such a tendency to overvalue future money as compared with future commodities, or to undervalue present money as compared with present commodities? If there is a tendency of this kind, it will explain the downward bias of futures markets.

The fact of premiums on futures as compared with spots, or upon distant futures as compared with nears, may seem more or less contrary to the theory just described (of an exchange rate between present and future goods unfavorable to the latter), if that theory be taken absolutely. But, as already indicated,² prospective changes in the situation as regards supply and demand are adequate to explain this result. In fact, the appearance of premiums on contracts made in the earlier part of the crop year that look forward to delivery in the latter part of the crop year is normal. The spread in question is commonly referred to in grain and other speculative commodity markets as the "carrying charge," the name of the cause being by metonymy applied to the effect. Within the crop year — or strictly

2. See page 372 above.

between the time of maximum and of minimum receipts at terminal markets — the future may be expected to be higher in price than the spot, or the more remote future higher than the near future, because the supply available at the time of small receipts has been kept over from the preceding crop at some cost to the holders. Within this period premiums on the future are normal. It is of interest to note, however, that they are seldom sufficient to pay the cost of actually carrying grain.³ They appear thus to be modified by the downward bias of futures which operates very strongly at other times (between crop years), and at times strongly enough to outweigh the positive carrying charge and throw even the remote futures within the crop year of the future trade to a discount. There is, in general, a residuum, for the year as a whole, toward the explanation of which result the downward bias is a beginning.

IV

VARIAION FROM PARITY BETWEEN MONEY AND COMMODITIES ON ACCOUNT OF FUTURITY AS AN EXPLANATION OF THE DOWNWARD BIAS

Under booming business conditions, present money is valued at less than par in exchange for present commodities; and under opposite conditions, it tends to be valued at more than par in exchange for present commodities. Presumably there would be the same sort of variation in general in exchanges of future money for future commodities as in exchanges of present money

3. Profits from mixing by elevators are doubtless a factor in the size of the apparent carrying charge (in the sense of a premium on the future) for grains; but it is to be noted that the downward bias of the futures affects cotton markets also, altho this commodity is handled in the original bale, and not in bulk.

for present commodities. On its face this situation offers no explanation of variations from parity in exchanges of future money for future commodities, and suggests no general principle applicable to them.

A premium on present commodities over present money, however, might be due to a difference between present and future commodities in excess of the difference between present and future money. It is to be noted that the difference between present and future money is practically a matter of the interest rate, and therefore subject to market determination and ready verification. The rate of interest is comparatively definite. Exchanges between present and future commodities are not similarly regulated by market competition; and the discount shown on the future commodities might be expected at least to fluctuate more than the similar discount on future money, and, therefore, often to exceed the difference between present and future money.

The fact that the only thing money is good for is to spend may have some bearing on the situation. Altho money is indirectly the most versatile of goods, it is directly the least useful, since substantially the only way in which it can be put to use is through exchange for commodities. In the exchange of present money for present commodities, it is presumable that the definite commodity for which the exchange is made is definitely and specifically wanted and therefore valued above the money.

On the other hand, the future commodity for which it is promised to pay future money is certainly not definitely and specifically wanted in the same sense as the present commodity bought for cash. In a speculative transaction the future commodity is in fact not wanted at all; only its expected price is wanted. It may there-

fore be that the buyer will, in general, expect to get and the seller to grant a slight concession in price in dealing in futures. The specific future commodity, unlike the specific present commodity, may thus be at a disadvantage as compared with money as of the same time, as the two are related through a judgment of comparative value. A specific commodity not wanted should be expected to be valued at less than par in relation to a versatile or universal good (money) which, it is true, is also not wanted as such, but which is the necessary intermediary for the conversion of the specific commodity not wanted into some commodity that is wanted.

In other words, in terms of mathematical inequalities,

A specific future commodity	<future money
Future money	<present money
Present money	<a specific, wanted, present commodity

Therefore,

A specific future commodity	<a specific present commodity
-----------------------------	-------------------------------

It will be noted that only in the second of these inequalities does the doctrine of the economic undervaluation of the future directly enter. This doctrine should be accepted as a general economic truth, whether one attaches importance to purely subjective grounds for it or not. But there are certain objective commercial facts pertaining to the bidding-up of present commodities that cannot properly be left out of consideration. These receive attention in the next section.

V

OBJECTIVE AND COMMERCIAL CAUSES OF DISCOUNTS ON FUTURES

In the business world the bidding-up of present commodities as such, or the payment of a premium for

"immediates," frequently occurs. For this, adequate technical and economic ground can easily be found. Where need is definite and immediate, there is no time to "shop around." It may be necessary for the buyer to obtain the last units required to fill contracts of sale, or meet other commitments, within a time limit that is closing upon him. The seller, too, will want leeway if he is selling what he does not possess, but expects to obtain, and will charge more if given no leeway; hence the competition on the selling side as regards immediates is narrowed down to those having an ample stock on hand. In general, it may be easier to obtain, on short notice, an amount of money than a corresponding amount of a specific commodity; while such a difference does not apply, or does not appear, for the person contemplating the same alternative to apply some time ahead.

There is evidence in the observed behavior of prices of a general tendency on the part of merchants to oversell and over-export, so that, toward the end of the crop year, prices for cash grain and for spot cotton at primary markets and shipping points generally go above a proper parity with prices at terminal markets and consuming centers. This tendency has been discussed with the writer by a cotton merchant of lifelong experience and great acumen, who refers to it as a "principle of over-exportation," applying it, however, to futures maturing late in the crop year, as well as to markets distant from centers of production. A prominent grain merchant, referring to another aspect of the same tendency as an obvious fact, says that wheat is worth more in Omaha than in Chicago and more in Chicago than in Montreal or seaboard points, of course after making allowance for freight. If cash merchants are thus prone to ship or commit themselves too readily to sell for distant delivery, it is quite possible that similar mercantile psy-

chology affects prices in the futures markets and helps to cause the distant futures to be at a discount as compared with the nears.

The general observation in the cotton trade that discounts on distant futures accompany short crops, and that premiums accompany abundant crops, has been offered as an explanation of the spreads in question. It is of interest as an observed sequence of events, and statistical tests indicate the general correctness of the observation for cotton futures.⁴ As an explanation, however, it is not satisfactory, because it contains no suggestion of the mechanics by which the effect is produced.

Commercial policies and practices of spinners and of buyers of cotton textiles and of other traders, however, may explain the observed connection. It is said that a short crop scares the mills into buying early. The purchases of mills are made for forward delivery of so many bales per month during a period of perhaps six months, or possibly longer. They are likely to be made on buyers' call, that is, at a price of so much on or off a specified future, the price to be fixed by the purchase of the future in question, which has presumably been sold by the merchant when the cotton to meet the call contract was bought. One reason why the spinner is in a hurry to buy (on call) under the conditions described is his desire to get the qualities he wants before the stocks are culled over and the qualities most in demand taken off the market. The cotton-grower, on the other hand, will hold his crop for a higher price more readily and more stubbornly when the crop is short. His "speculation" in spot cotton appears, according to the behavior of the futures, to be overdone. It is said that the speculator in futures follows the mills in bidding up the nears. The discounts on distant futures, also, may cause buyers of

4. Report on the Cotton Trade, Part 1 (1924), pp. 225-227.

textiles to hold off in the expectation of lower prices, and to buy only from hand to mouth.

Factors such as those mentioned in the preceding paragraph affect grain as well as cotton — with differences which are largely associated with "bulk handling." In particular, the miller likes to obtain "virgin" wheat, as shipped direct from the country.

A possible explanation of the connection between discounts and short crops, which relates to the general psychology of speculative judgments or judgments of future prices, whether in relation to spot or futures markets, can be built upon the presumable importance of inertia in such judgments. If the futures markets are controlled in times of high or low prices by those who judge prices only by comparison with usual or average prices for some period preceding, instead of with reference to the proper adjustment between existing supply and demand, then extremely high or extremely low prices, as compared with recent levels, will tend to cause discounts or premiums, respectively, on the distant, regardless of the correctness of the adjustment between supply and demand under the differing circumstances. According to this theory, the speculators operate as a brake upon extreme prices, without nice regard to the merits of the case. While the psychology of the speculator may frequently be of the nature described, it is intended to suggest that the factor mentioned has in fact not any such general applicability; unless it can be accepted, also, that the speculator habitually pushes too far any price movement, whether up or down, which he dominates.

In addition to influences just described, it is important to take account of the psychology of the hedger in relation to the fact that he is more often an initial seller of futures than an initial buyer. The hedger is relatively

indifferent as regards the price he obtains on his sale. At the other end of his transaction there may be presumed to be a speculative buyer whose entering the market is entirely voluntary, and who is actuated by some kind of an inducement to trade. As regards the speculative seller of the more remote futures, on the other hand, no net inducement is necessary to cause him to enter the market, if he has the attitude above indicated to be more or less characteristic of the mercantile type of mind.⁵

Short sellers of remote futures, as well as forward-selling merchandizers, appear in general to be over-optimistic as to how they are going to be able to fill their contracts. For this reason, if for no other, they are likely to become especially urgent buyers as their contracts approach maturity. The buying in of hedges may also be affected by last-minute exigencies. Moreover, good business conditions will tend to make buyers comparatively indifferent to high prices; and yet under bad business conditions the postponement of buying in till the last moment may have a similar effect.

It may be that the character of the future contract as such — referring especially to its seller's-option feature — tends to cause the short seller to go into the distant futures, while the speculative buyer who considers technical situations will see in the tendency to squeeze an inducement for him to enter the nears.

If the amateur and outside speculators are almost always bulls, then it necessarily follows that among speculators the short sellers are the more professional element

5. It is perhaps necessary to state that hedging is a very minor factor, in terms of volume, in a large futures market such as Chicago. The action of the market is, therefore, the action of the speculators, except so far as hedges may weigh more than in proportion to their volume, either because many hedgers do the same thing at the same time, or because their trades are anticipated or reflected, and the effect reinforced, by the moves of the speculators.

and more "inside" the exchanges. It is presumable, therefore, that the extent of their commitments is, on the whole, less hampered by the exaction of heavy margins than is the case with speculative buyers. Perhaps this also is a factor in putting down the futures.

If there is a general downward bias in futures, it is an interesting problem to consider how the short seller (as distinguished from the hedger, who has income from cash grain, also) gets out of this situation whole. No solution is attempted here. It is of interest to note that, under the conditions indicated, spreading between options by buying the distant and selling the near future, and transferring from time to time, might be regarded as a possible source of regular income. It has also been suggested by a spinner, as illustrating conditions in the futures, that, by keeping cotton hedged by a succession of transfers from near to distant futures, it would be possible in time to get the cotton for nothing — except so far as commissions and charges might eat up the profits. Altho these ideas should not be taken very seriously as practical suggestions, — and certainly not as fool-proof, — it should be noted that they are the thoughts of practical grain and cotton men and as such are of much illustrative and probative value.⁶

6. On the other hand, Mr. Julius Barnes thinks that premiums on all varieties of cash grain may be regarded as normal, as appears in the following:

Q: The spread between the cash and the future price is less satisfactory from the point of view of the elevator when the future is at a discount, is it not?

Mr. Barnes: Well, some elevators think so. I do not. I think that this insurance level in Chicago is made so wide that nobody will buy it until it is cheap, and that every kind of wheat in every location, in every variety, in every grade, will sell at a premium above it. [This] gives the clearest play for really enlightened merchant judgment and is very desirable. (From stenographic transcript of Federal Trade Commission hearings on Market Manipulation of Grain, 1922, p. 122. The point is discussed further in following pages of these hearings.)

This "premium" on the cash wheat, it should be remembered, is the

VI

CONCLUSION

The general relations between future and spot prices are stated in this paper, not so much in order to establish the facts of the case, as with a view to passing beyond these facts to the consideration of certain attendant phenomena that are of some practical and much theoretical interest. That May wheat in October may be expected to be higher in price than spot wheat in October, and September wheat in April lower than spot wheat in April, are elementary facts. That within the crop year the futures should be above the spots — care being taken to eliminate the effect of quality in the actual wheat upon the comparison — requires no argument. That the more remote futures should be above the nears — both terms of the comparison being, of course, within the crop year — is equally evident. The special point to which attention is here called is what is referred to as the downward bias of futures: the tendency of the futures to be below a price that would contain a minimum carrying-charge difference between the present spot price and that of the same quality of grain in the delivery month. The future is often even at a discount below the current spot price of grain of the same crop.

Such discounts on the future, to repeat, are not to be confused with Böhm-Bawerk's discount on future goods

discount on the future the other end up. But the element of true discount can be separated from premium for quality if comparisons are made with the low-priced contract grade. When this is done, the discount, thus separated from the influence of quality, tends to disappear in the delivery month, tho often in evidence prior to that time. (Cf. vol. vi of the Federal Trade Commission's Report on the Grain Trade, table 65 and diagrams 8 and 9.) A premium for quality would naturally hold in the delivery month. In fact, the term "contract grade" is often used to denote absence of premium qualities.

in exchange for present goods. But it is possible that general ratios of exchange between commodities and money — and especially those referring to the future, because relating to undetermined conditions — are affected by the narrow applicability of specific goods to the satisfaction of wants in comparison with the versatility of money, as contrasted with the urgency with which specific “immediates” may be wanted under the exigencies of consumption and of commerce, expressed, for example, in the payment of premium prices.

This downward bias of futures is no mere theory, but a concrete fact of the commercial world, and concrete conditions determine its manifestation. Some of these conditions have been briefly suggested. As a practical matter, also, it should be noted that the bias in question increases the cost of hedge sales of futures and is worthy of remedial attention, if a remedy can be found. At least, hedgers should be aware of this element in their costs of doing business.

Whether the foregoing considerations warrant a general statement to the effect that money in exchange for present commodities tends to be undervalued, — whether mainly for subjective or mainly for objective reasons, — and that it tends to be overvalued in an exchange of future money for future commodities, is left for the reader to decide for himself. Similarly, it is left to the reader to form his own opinion whether this tendency has a logical relation to the established proposition that in general there is a premium on present goods in an exchange for future goods. A willingness to pay more money in the present than one will commit one's self to pay in the future for the identical thing, would seem to be not unrelated to a willingness to pay more money now for present commodities than for future commodities.

At any rate, the assumption that contemporary relations of supply and demand control prices without there being any variation in the effect of this relation as between a present situation and a foreseen future situation, is subject to important qualification. The carrying charge and carrying-charge premiums are a specific development of the general supply-and-demand situation referred to. But the counteracting downward bias of futures is apparently also generally operative. If the latter is still a matter of supply-and-demand conditions, it is such only indirectly.

G. P. WATKINS.

WASHINGTON, D. C.

EQUILIBRIUM IN INTERNATIONAL TRADE: THE UNITED STATES, 1919-26

SUMMARY

I. The American balance of payments, 1919-26, 388. — Wide but strikingly parallel fluctuations of net capital and commodity movements, 390. — The domestic situation, 393. — II. General analysis of the maintenance of equilibrium in international payments, 395. — The effects of importation, 399. — The correction of excesses is not equally rapid in all cases, nor does the "causal sequence" always proceed along the same lines, 407. — III. The effects of exportation, 412. — Imports and exports taken together, 416. — The correction of excesses; effects of the business cycle. If foreign trade is relatively unimportant, the correction of large excesses must wait on domestic cyclical movements, 422. — IV. Application of these conclusions to the United States, 423. — The period 1919-21, 424. — The period 1922-26, 429. — The changes in the *net* items of the American balance of payments have had little effect on internal conditions; and their origin has usually made them mutually offsetting, 432.

I

In the nine years since the war, the principal items in the American balance of international payments have undergone extraordinary and often abrupt changes. These changes, which in their general character are familiar to all, have been largely the consequence of the war-time and post-war upheavals in Europe. Not only did the European belligerent countries lose the foreign outlets for commodities and capital which they had dominated before the war, but they also themselves became, suddenly and almost overnight, importunate seekers after huge amounts of foreign commodities and capital. The one great source of supply of these things was the United States. As a result, our merchandise exports, which had averaged around two billions a year in the decade before the war, shot up to nearly eight

billions in 1919;¹ our international financial position reversed itself so rapidly that we soon became the world's greatest lender, instead of one of the great borrowers; and — a final subtle evidence of the new orientation — we began to import gold heavily. This extraordinary expansion had no more than been achieved, however, when the movement began to reverse itself with almost equal rapidity. The merchandise export surplus fell steadily after 1920, and almost disappeared in 1923. The *net* export of capital, despite continued and increasing American investments abroad, dwindled quickly and turned into an actual net import for a time, again in 1923. And the net importation of gold, declining since 1921, promises soon to stop permanently.

In this history of change and violent reversal, three things stand out with especial clearness and significance. They are shown on the accompanying charts and table. One is that two of the largest items in the balance of payments, the balance of trade and the net movement of capital on account of principal, have fluctuated very widely in the eight years since 1919 (Chart I, p. 390). The second is that the other two important items, the net movement of interest, profits, and dividends on the one hand, and the aggregate of the other non-capital invisible items on the other, have on the contrary shown a slow, steady growth, an orderly and practically uninterrupted increase each year (Chart II, p. 391). They have, in other words, been comparatively inert elements in the general situation. The same thing is, on the whole, true of the net movements of gold since 1921. Finally, and most striking of all, there has been a quite remarkably close correlation between the movements of the more violently fluctuating items themselves — between

1. Allowing for price changes, this is an increase of roughly 100 per cent in physical volume.

the balance of trade and the net movements of capital on account of principal. The conclusion is inevitable that, whichever be cause and whichever effect, the vast changes in the volume of our net exports of capital on account of principal have been very intimately connected with the changes in the volume of our net exports of commodities. The fluctuations of the interest and service balances, on the other hand, do not seem to bear any direct relationship to the fluctuations of either the commodity items or the capital items.

One further word as to the relation between the commodity and the capital balances themselves, a relation that has been especially close since 1921. Chart I presents two curves for capital. One, covering the whole period, shows the estimated movement of long-term

CHART I. THE NET MOVEMENTS OF COMMODITIES AND CAPITAL, 1919-1926

In billions of dollars

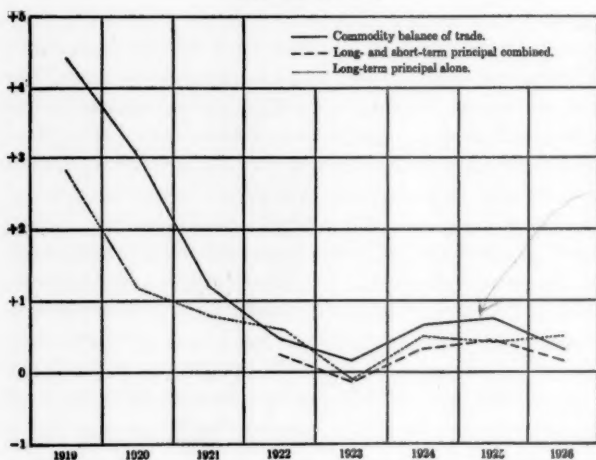
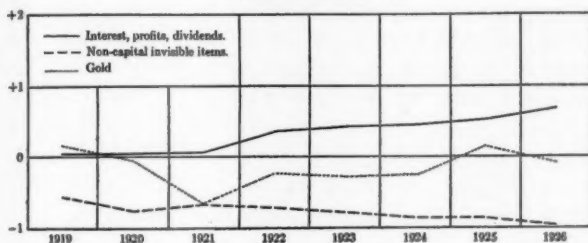


CHART II. THE MORE STABLE ITEMS (NET) IN THE AMERICAN
BALANCE OF PAYMENT, 1919-1926

In billions of dollars

THE AMERICAN BALANCE OF PAYMENTS, 1919-26: NET BALANCES
OF PRINCIPAL ITEMS

In millions of dollars *

Year	1 Merchandise, specie and currency	2 Gold alone	3 Move- ments of long term principal alone †	4 Short term and demand balances alone	5 Move- ments of combined principal ‡	6 Interest, profits and dividends	7 Non- capital invisible items §	8 Balances unaccounted for: errors and omissions ¶
1919	+4,419	+160	-2,825	...	...	+ 50	-562	+1,082
1920	+3,029	- 50	-1,174	...	...	+ 50	-762	+1,143
1921	+1,198	-667	- 834	...	...	+ 80	-672	- 228
1922	+ 488	-238	- 638	+375	-263	+351	-709	- 133
1923	+ 142	-294	+ 109	+ 3	+112	+417	-787	- 116
1924	+ 698	-258	- 512	+216	-306	+464	-852	+ 4
1925	+ 772	+134	- 432	- 61	-493	+515	-858	- 64
1926	+ 310	- 98	- 522	+359	-163	+688	-985	- 150

* Data from U. S. Department of Commerce, Trade Information Bulletins, nos. 399, 503. The figures for 1927 were not available at the time the present article was written.

† Includes long term investment principal; the Inter-Allies debt payments; and extraordinary government expenditures abroad—in excess, that is, of the "normal" of about \$5,000,000 a year. This last item was of major importance only in 1919 and 1920. It then represented relief and reconstruction expenditures, and was a true tho largely non-commercial export of capital. The figures, in millions, are: 1919, 2,375; 1920, 360; 1921, 50; thereafter, negligible.

In graphing these data and those of col. 5, the algebraic signs were reversed, in order to make easier the comparison of commodity and capital movements. An "export" of capital, however, is of course an "import" of securities or other documents, and is therefore properly entered as a debit in this table.

‡ The algebraic sum of cols. 3 and 4. See previous note.

§ Includes motion picture royalties and "normal" government expenditures abroad, the latter averaging about \$5,000,000 a year, as well as tourists' expenditures, immigrants' remittances, freights, charity, etc.

¶ The great size of the unaccounted for item in 1919 and 1920 is probably explained by the contemporary accumulation of book and short term credits, for which no estimates are available.

principal alone. Beginning with 1922, however, the Department of Commerce has also estimated the net movements of short-term and demand balances. In the second capital curve, covering the period 1922-26, these balances have been added algebraically to the curve for long-term movements, thus giving a curve for combined long- and short-term capital.² The curve for long-term capital taken alone evidently stays nearer to the commodity curve most of the time after 1921; but its *fluctuations* correspond less closely to the commodity curve than do those of the combined capital curve. This suggests that it is the *combined* movements of capital on account of principal, long-term and short-term taken together, that have had the more significant relationship to the movements of commodities.³

2. The width of the spread between the long-term capital curve and the commodity curve, especially in 1919 and 1920, is probably explained in considerable part by the absence of data for those years on short-term capital movements; that is, of data with respect to the granting of short credits against exports, and the accumulation of foreign balances. These transactions were known to be very large, and later proved difficult to liquidate.

At the time the present article was written, the data for 1927 had not been published.

3. Two other points are of interest. One is that the two capital curves themselves seem to approach and draw apart every second year; that is, foreigners seem to build up a net excess of short credits over our similar credits abroad, and then draw down the excess, about every second year. A possible explanation, advanced very hesitantly, is that from time to time foreigners accumulate more credits here, chiefly by the sale of securities, than can at once be transferred abroad. As the final transfer of the credits is later gradually effected, chiefly either by, or as a consequence of, changes in the trade balance, the excess of short balances (which are not, of course, necessarily now owned by the original long-term borrowers themselves) is drawn down. This tentative explanation must be qualified, however, in the light of the large and urgent foreign demand in recent years, especially from the Continental countries, for short dollar balances as a means of protecting funds from threatened currency depreciation, excessive taxation, and so on.

The second point is this. We have ourselves been investing a large net excess of long-term money abroad, but we have also, however unintentionally, been getting into debt on the short-term account. That is, we

All the major items in the American balance of payments, to repeat, have thus undergone very marked changes since the war; and while some of them have shown steady growth in a uniform direction, others have fluctuated widely. In other words, the general equilibrium of the balance of payments itself has apparently been submitted to very severe strains and pressure, first in one direction and then in another. At the same time, however, we have had an absolutely unprecedented economic situation within our own borders. The violent expansion and even more violent contraction immediately after the war ran, on the whole, along lines not inconsistent with past experience; but since 1921 a quite new chapter in economic history has been written. From 1921 to the end of 1926, our aggregate manufacturing and mining production increased on an average of 30 to 35 per cent; bank clearings rose by 40 per cent, and debits to individual accounts in the Federal Reserve system by over 50 per cent; money rates have been easy since 1922; and our general prosperity has increased enormously. In these things alone there might be nothing to arouse undue surprise, but it has all been done with a virtually unchanged price level! The general drift of prices has been slightly downward, if anything, especially since 1924; there have been no marked swings either way; and the extreme range of the monthly fluctuations, from 1921 to 1926, amounted to only about 9 per cent.

This domestic situation, when considered in combination with the balance-of-payments situation, constitutes a curious and, at first sight, extremely perplexing problem. On the one side are the extraordinarily disordered

have been borrowing short and lending long. The situation is not without its possible dangers, for at the end of 1926 our net debit in the short account was around \$750,000,000. Potentially at least, this net debit was a first lien on our gold supply.

and abnormal conditions in Europe, and the consequent remarkable changes in the movements of our foreign trade and foreign investments. On the other side is our own unrivalled growth in the face of stable and even declining price levels, and, especially since 1921, our quite general financial tranquillity and sunshine. Apparently the adjustments made necessary by the international disturbances have been effected without producing any material change at all in the domestic situation as a whole. How has this been done?

To answer that question it is necessary, first, to examine in rather general terms the way in which equilibrium in the balance of international payments itself is characteristically maintained. Of this, however, there is no single and generally accepted explanation. We know that the older classical doctrine, which ran in terms of specie flows and the resulting changes in prices and the balance of trade, requires at the least very considerable modification, if indeed it can be retained at all. The growth of the invisible items in the balance of payments, and the overwhelming importance of deposit banking in most of the leading countries, have given rise to problems and conditions of which the price-specie flow doctrine in its original form takes little or no account. As yet, however, there has been no agreement on a more satisfactory formulation, and it is necessary to break at least some of the ground afresh.⁴

4. See, however, Professor Taussig's recently published *International Trade* (New York, 1927), especially pp. 201 ff., 226 ff., 259 ff., and 329 ff. My only objection to Professor Taussig's admirable discussions is that he has hesitated to commit himself to a single definite formulation of the explanations which the new problems require. The explanation given in my own *Theory of International Prices* (see, for example, p. 413) is admittedly incomplete.

II

Any discussion of the maintenance of equilibrium in the balance of international payments, if it is to be of use in the world as it is today, must rest on two premises. One is that the countries involved keep their foreign exchanges on a freely working gold or silver exchange standard. It is, of course, not necessary that the selected metal be coined and put in actual circulation within the country, but it is essential that it should always be obtainable on demand for the making of international payments. Otherwise there can be no fixed point of reference whatsoever in the trade between countries, and literally anything may happen. To avoid the complications produced by fluctuations in the gold-silver ratio, I shall further assume that the selected base is gold. The second premise is that the internal banking and currency system of the country is organized on the basis of some sort of reserve, whether actual specie or foreign balances and bill holdings, in such fashion that a fall in the reserve ratio beyond a given selected (possibly variable) point is regarded as being dangerous, and is made the peremptory signal for contraction. If this is not the case, then within a very wide range there is no sure limit at all to the extent to which a credit expansion may be pushed.

These two premises, which of course correspond to the actual practice of most of the leading countries, and which embody the ardently desired goals of the others, provide the general setting of the problem of equilibrium.

Consider next the ways in which international payments themselves can be made. There are at bottom only two such ways. One is the actual shipment of things which have value in themselves, such as gold,

✓ silver, or securities. Quantitatively, however, the importance of this method of payment is small. The movements of specie and securities may, and often do, have a very great effect upon the money markets and general credit structures of the countries concerned, but their significance as a means of effecting international payments is usually negligible. The amounts involved are too small, as a rule, relative to the volume of payments being currently made. Moreover, such movements ordinarily take place for reasons quite other than the simple desire to pay for transactions already completed. The other principal method of making international payments is the use of bills of exchange. A foreign bill of exchange, however, like the domestic check, has a purely negligible *intrinsic* or commodity value. Its commercial value is derived from the fact that the bill represents a right or a claim to receive payment in a specific currency. When a bill is used to make international payments, what is paid over, in the physical sense, is therefore not anything having an intrinsic value in and of itself: what is paid over or transferred is a document representing a *right or a claim to receive payments* in currency. As a rule, indeed, what is transferred is simply the ownership, or a claim to the ownership, of bank deposits — which are themselves merely rights to receive currency on demand. Bills of exchange of one sort or another are used to make international payments in so large a proportion of cases that, except at certain points, the other possible methods can be ignored.

There are various kinds of bills of exchange, and the effect their use produces differs according to the origin and terms of the particular bill. Without going into details, the principal alternatives involved in the use of such bills can be outlined as follows. First, if an exporter draws a bill on the foreign importer, running in

terms of the foreign currency, then, when the bill is accepted abroad, the exporter acquires the right to receive payment in the *foreign* currency, at once or in the near future. As a rule, this means that he has acquired, or will soon acquire, the ownership of a foreign bank deposit. Second, if an importer draws or buys a draft, again running in terms of the foreign currency, and sends it to the foreign exporter, then, when this draft is cashed abroad, the importer, or the person from whom he bought the draft, has *surrendered* either foreign currency or the right to receive foreign currency. As a rule, this means that he has surrendered the ownership of a foreign bank deposit. In both of these cases the drawer of the document, whether exporter or importer, thus writes it in terms of the *foreign* currency; and this is the commonest practice. But other methods are also widely used.⁵ The importer might, by arrangement with the foreign exporter, use a draft drawn in the importer's own currency. In that event, when the draft was cashed, the importer or his bank would surrender the ownership of currency or bank deposits located in the importer's own country instead of abroad. Similarly, the exporter might, by arrangement with the foreign importer, use a bill drawn in the exporter's own currency. In that event, when the bill was paid, the exporter or his bank would acquire the ownership of currency or bank deposits located in the exporter's country, instead of in the foreign country. Finally, the docu-

5. Of course, the actual documents may be drawn on or by banks, or both, the banks acting as agents for the ultimate debtor and creditor; but while this intervention of the banks alters the form of the relationship between the two, it does not alter its real nature. To avoid a needless complexity of exposition, in what follows the ultimate debtors and creditors will be treated as if they always dealt with one another directly. Similarly, the various alternative devices for extending credit and postponing payments, under which the documents themselves may actually be drawn, need not be discussed, since they do not alter the fundamental nature of the process of payment itself.

ments might all be drawn in terms of the currency of some third country, and would result in transferring the ownership of bank deposits located there.

The alternative possibilities are evidently numerous. To avoid undue complexity in the discussion that follows, I shall therefore arbitrarily assume that the drawer of the document always writes it in terms of the *foreign* currency. Thus, if payment is made by the use of the exporter's bill, it will be assumed that the bill is drawn in terms of the foreign (importer's) currency; if payment is made by the use of a draft purchased by the importer, it will again be assumed that the draft runs in terms of the foreign (exporter's) currency. These assumptions are of course literally contrary to fact in a good many cases, especially with respect to such a country as England, which finances the bulk of its trade in terms of sterling alone. They do not affect the validity of the argument that follows, however; and the interested reader can insert for himself the modifications in exposition made necessary when methods of payment other than the ones here postulated are employed. As will appear more clearly later, the important thing is not the form of the bill itself; the important thing is simply the matter of whether the bank deposits which are drawn against, or which are acquired, are located at home or abroad. The two forms of payment here selected are merely taken as types of the two principal methods of making international payments. Thus, if we consider, for example, the ways in which any one country's exports can be paid for, the use of an exporter's bill payable abroad is typical of those payment operations which transfer the ownership of *foreign* bank balances; the use of a bank draft sent by the foreign importer, and payable in the exporting country, is

typical of those payment operations which transfer the ownership of *domestic* bank balances.⁶

Our problem, then, is this: what effects does the making of international payments have on the general situation within each country; and what, if any, are the resulting forces which do or may work toward maintaining an international equilibrium in these payments?

Take first the effects of importation in general — that is, of international debit operations of every kind and class. The mere process of importation itself, and of making the corresponding international payments, produces certain significant changes in the size and location of foreign and domestic bank balances, in the distribution and volume of current domestic purchasing power, and in the reserve position of the banks. These changes take place quite regardless of the relation of the volume of importation (debit operations) to the volume of exportation (credit operations).

(1) Effect of importation on foreign and domestic bank balances. If the imports are paid for by means of a foreign currency bank draft purchased by the importer, the aggregate size of the bank balances owned in foreign countries by the importing country's banks and traders is diminished, for the encashment of the drafts abroad draws them down. If, on the other hand, the imports are paid for by the use of the foreign exporter's

6. If, instead of this, American exports, for example, are paid for by means of exporters' bills drawn in *dollars*, instead of in the foreign currency, the ownership of *dollar* bank deposits then passes to the exporters or their banks, instead of the ownership of foreign deposits. This is precisely the same result as that produced when the foreign importer of American goods, instead of meeting an exporter's bill, makes his payment by sending a dollar draft; and for the purposes here in view American exporters' *dollar* bills can be grouped with the *dollar* drafts sent by foreign importers. Both increase the American ownership of *dollar* bank balances or currency. And so in the other sorts of case. They all reduce to one of two alternatives: transfer of the ownership *either* of domestic or of foreign bank balances or currency, as the means of effecting international payments.

(creditor's) bill, running in terms of the importing country's currency, then the size of the balances owned by *foreign* countries in the *importing* country is *increased*; for the discount or payment of the bills in the importing country builds these balances up. If the two methods of payment are used simultaneously, their combined effect is thus to shift the ownership of foreign and domestic bank balances, taken together, from the importing to the foreign exporting country. There are evidently limits, however, to the extent to which this shifting of balances can be carried, limits of which more will be said a little farther on. It is also clear that, if no countervailing influences are at work, the exchange rates will begin to move unfavorably to the importing country, and may even reach the gold-export point.

(2) The redistribution of current domestic purchasing power in the importing country, and the position of the banks. The mere making of foreign payments by the importers does not in itself alter the current volume of purchasing power (currency plus bank deposits) ⁷ in the importing country, but it does change the distribution of the ownership of that purchasing power. If the importer makes his foreign payment by purchasing a foreign currency bank draft and then sending it to the foreign creditor, purchasing power passes from the hands of the importers — and hence ultimately of consumers at large — into the hands of the foreign exchange banks in the importing country. These latter banks then find that their "due from other domestic banks" item is increased, and possibly their currency holdings. Against this must be set, however, an accompanying decline in their foreign balances, when the draft drawn against these balances is cashed abroad.

7. Excluding, of course, inter-bank deposits so far as these offset one another in the aggregate.

Whether this replacement of foreign balances by domestic assets and reserves is regarded as an improvement in the reserve position and in the lending power of the banks depends, of course, on the banking laws and practice of the particular importing country. In the United States such a change is usually viewed with favor, up to a certain point, but on the Continent it would usually be regarded as virtually a loss of gold.

If, instead of this, the importer meets his foreign obligation by paying off a bill in his own currency, drawn on him or his agent by the foreign exporter, then the foreign exchange banks' domestic assets and reserves are again increased, while they suffer no loss of foreign balances. But their *liabilities* now increase exactly as much as their assets. The foreign exporter's bill itself belongs originally to the exporter or to his bank, and when it is discounted or paid off in the importing country, the resulting bank balance similarly belongs to the exporter or — usually — to his bank.

From the point of view of the foreign exchange banks in the importing country, the difference between these two methods of paying for imports can be stated briefly as follows. The use of the foreign currency bank draft produces a mere substitution of domestic assets for foreign assets in the banks' accounts, with no change in the *totals* of either assets or liabilities. The use of the foreign exporter's bill, drawn in the *importing* country's currency, increases net domestic assets, but also increases liabilities (to foreigners) in exactly equal amount. The eventual limitation on the use of this type of bank draft lies in the fact that the volume of foreign balances owned by the banks of a given country is usually small relative to the volume of business done. When these balances have been drawn down to the agreed working minimum in each case, the drawing of

further uncovered drafts against them therefore necessarily ceases, except in so far as additional funds can be borrowed in the importing country. The limitation on the use of this type of foreign exporter's bill, tho much less positive, lies both in the presumable unwillingness of foreign banks to acquire indefinitely large balances in the importing country, and in the fact that the continued increase in the demand and short-term liabilities of the importing country's banks to *foreigners* puts the country's banking system as a whole in a peculiarly vulnerable position. A sudden foreign drain of reserves becomes increasingly possible. These limitations are most important to bear in mind.

With respect to the distribution of domestic purchasing power in the importing country, however, the two methods of settling obligations abroad have precisely similar results. Both lead to a redistribution or transfer of the ownership of purchasing power in current circulation, tho with no increase in the total outstanding. The transfer is made to the foreign exchange banks from the importers, and hence eventually from the ultimate consumers of imported things. That is, importation taken by itself produces a *decrease* in the amount of purchasing power currently in the hands of the final consumers of the imports, whether these imports be goods or services or securities, and whether the consumers be manufacturers or private individuals or investors. The domestic consumption of domestic products, on the contrary, does not entail this consequence with respect to the aggregate of consumers in the country; or if it does (with deference to Messrs. Foster and Catchings), does so only in limited degree. The domestic production of goods gives rise to the domestic receipt of current spendable income; and so too, tho more slowly, does the domestic flotation of domestic

securities. But importation does not. The fact that goods or securities or services have been imported does not and cannot, in itself alone, cause consumers to have any more current income than they had before. Instead, in so far as they buy current imports, they have just that much less left to spend currently on articles of domestic production. This point too is most important. It indicates that, if importation is pushed far enough, and if nothing else happens, the result will be a decline in the general demand for domestic products, and hence a situation working on the side of falling domestic prices.

(3) The possible increase in the volume of purchasing power in the importing country, and the decline in the banks' reserve position. Importation thus necessarily leads to a redistribution of the domestic purchasing power currently available in the country. It may also lead to an actual *increase* in this volume, and usually does. The increase may come in one or all of three ways. First, if payment is made by the use of the foreign exporter's bill, drawn in the importing country's currency, this bill may be offered to the banks of the importing country, after acceptance there but before maturity, for discount or as loan collateral. The volume of purchasing power in the country is thus increased temporarily. Of course it declines again when the bill matures and is paid off,⁸ but a series of such operations will overlap, and will result in a substantial net increase in

8. The payment of the bill by the importer merely reimburses the bank for its earlier advance. The "purchasing power" paid in by the importer, usually by transferring a bank deposit, is simply extinguished, (or, in the case of a payment in currency, is removed from circulation). The temporary increase in the country's purchasing power referred to in the text is, of course, simply an anticipation of this payment by the importer. If the importer makes payment by buying a foreign currency draft, no financing of this sort occurs, for such drafts are usually drawn for sight.

the volume of purchasing power currently outstanding. Second, the importer may himself borrow from the banks to finance part or all of his importations. Finally, the dealers and manufacturers who in turn buy the imports may also borrow, to finance their operations; and so to some extent, with respect to imported securities, of the investment bankers. Note, however, that the banks will *not* make loans, for consumption purposes, to the ultimate consumer of finished goods and services, or ordinarily to the private investor. These borrowing operations all increase the amount of purchasing power currently outstanding, temporarily in any one case, but with a substantial and relatively enduring increase in the aggregate. From the point of view of the banks, they also evidently increase the liabilities of the banking system as a whole, without there having been any material increase in general reserves.⁹ The effect of the process of importation, to this extent, is therefore to force down the average reserve ratio of the banking system.

So far as the importation, manufacture, and distribution of the imports is thus financed by the banks of the importing country, the volume of bank credit outstanding is increased. The dilution or relative decline in consumers' current purchasing power discussed above is then mitigated, and may even be avoided for a time. But not *all* imports will be financed in this way, nor to their full value. The temporary increase in aggregate national purchasing power produced by the financing will therefore be less than equal, in absolute terms, to the increase in the volume of imports offered for sale. Moreover, the classes of people who benefit by this temporary increase in purchasing power are merchants,

9. Reserves will be increased only to the extent, usually negligible, that the importers pay cash to the banks, to meet their bills, repay loans, and so on.

manufacturers, and so on, and are in large part not the same as those classes — the ultimate consumers of goods and services and securities — whose current demand is diluted by the imports. For these last, the amount of purchasing power currently available is usually not increased; and in consequence of the importations it has to be spread over a wider range of things currently offered for sale. The general situation, despite the increase in the amount of purchasing power currently held by the original importers themselves, therefore continues to work on the side of a declining demand for domestic products, and falling prices.

To this point we have been examining the immediate effects produced by the mere process of importation itself, and by the consequent making of payments abroad. We found that importation as such, considered alone, brings about marked changes in the ownership of both foreign and domestic bank balances, in the size and distribution of the volume of domestic purchasing power currently available, and in the position of the banks. We have hitherto paid no attention, however, to the presumable relation of this importation to exportation (credit operations). Everything that has been said thus far is equally true whether imports are large or small, and whether they are less than exports or exceed them. Nevertheless, it has been shown that some of the conditions resulting from importation would, if pushed far enough, become dangerous to the importing country. The next step, therefore, is to see what happens when imports (debit operations in general) not only are of considerable size, but also show a large and continued excess over exports (credit operations in general).

The immediate effects of a large and continued excess

of imports can be inferred directly from what has already been said. So far as the excess imports are paid for by bankers' foreign currency drafts, the balances owned abroad by the importing country will be drawn down to the working minimum, and may even be exhausted. The size of these foreign balances at any one time is usually not large relative to the volume of business done, however, and a continued import excess will therefore compel an increasing resort to the other method of making international payments, the use of the exporter's (creditor's) bill drawn in the importing country's currency. This in turn will result in the piling up of balances owned by foreigners in the *importing* country, a process which the foreign country's banks will usually view with increasing disfavor when it goes beyond a certain point. The two sets of changes working together will operate to move the foreign exchange rates in a sense unfavorable to the importing country, and may even force them to the gold export point.

Meanwhile the position of the foreign exchange banks in the importing country becomes increasingly threatening. First, the sale of their foreign balances in return for domestic balances may or may not please them; but the accumulation of a large net short-term or demand indebtedness to foreign banks certainly will not. It is a situation which experience always shows to be inherently dangerous. Yet the very piling up of short funds in these banks, placed as they are at the center of the financial system, may well produce easy money-market conditions for an interval, and thus make the situation harder to control. Second, in so far as the banks have also been lending against the increased supply of foreign exporters' bills now in the market, and especially in so far as they and other banks have been financing the distribution and manufacture of the in-

creased imports themselves, the average reserve position of the banking system as a whole has been impaired. This fall in the reserve ratio will be further accelerated if the movement of the foreign exchange rates, just referred to, induces an export of gold.

Finally, the amount of purchasing power currently in the hands of consumers at large in the importing country is being steadily diverted to the imports themselves, and the demand for purely domestic products is, therefore, being correspondingly diminished. It is, true of course, that the amounts of purchasing power currently spent on imports by the final purchasers merely go into the hands of the foreign exchange banks; and these banks may thus be enabled to increase their own lending operations. But they will be unable to increase materially the volume of purchasing power in the hands of *consumers* in the country at large; and they will therefore be unable to bring about any very substantial increase in the aggregate current purchases of imports and domestic products combined. To summarize the situation in rather general terms, the volume of things offered for sale in the country is augmented by exactly the amount of the new imports, but the volume of purchasing power currently available for buying these things rises, if at all, much less than in proportion. This condition works on the side of falling prices, and thus constitutes a further threat to the position of the banks, in the near future if not at present.

A large and continued excess of imports thus sets up three principal conditions in the importing country, which *may* act as correctives of the situation. One is the movement of the exchange rates (which makes imports slightly dearer than before, exports slightly more attractive to foreigners), and the possible resulting outflow of

gold. The second is the position of the banking system, which finds itself confronted with a declining average reserve ratio, a growing volume of short-term and demand liabilities to foreigners, and in increasing danger, just referred to, of serious gold flows. The third is the diminution of the current demand for domestic products, in consequence of the purchase of the imports themselves. Taking imports and domestic products together, to repeat, the volume of things currently offered for sale has increased, while the volume of purchasing power currently in the hands of consumers and available to buy them has increased, if at all, much less than in proportion. This general situation works on the side of falling prices, and for imports as well as for domestic products.

It is evident that these three conditions all operate in the same direction. If they become sufficiently acute, they will *tend* to bring about a contraction in credit, a fall in prices, and a reduction in imports — and will thus, incidentally, tend to restore equilibrium in the balance of international payments. Whether they will actually produce these effects in any given case, however, depends on the general business situation in the importing country at the time, and on the relative importance of international trade in the country's economic life. No single general rule can be laid down; there is no one positive principle which will work with equal certainty and speed in all weathers. If the import excess occurs at a time when general business conditions are easy in the importing country, no immediate and obvious effect of national importance will necessarily be produced at all. At such a time prices are not high, production is moderate, credit is abundant. The situation corresponds to the early stages of recovery in the typical analysis of the business cycle. If over-

importation takes place, the disturbance will be confined very largely to the exchange markets. Important gold drains might even appear, and thus restore the equilibrium of international payments temporarily, without producing any general reaction at all upon the national economic life. But it is extremely unlikely that a large and continued increase in importing (debit) operations will ordinarily develop in this situation. The high prices and insistent demand that produce a heavy inflow of commodities are absent, and altho credit conditions are easy, there is no large and *increased* surplus of investment capital that can be attracted abroad in volume by the higher yields of foreign securities.

Any large and sustained excess of importing (debit) operations is apt to occur, rather, in the earlier stages and in the full tide of prosperity. At such a time prices and demand are rising; production is expanding, but always lagging a little behind; and foreign goods seem cheap. Until money rates begin to harden, foreign securities also are attractive; and even then, altho the inflow of securities may abate, the general optimism and confidence of the time may lead business men to expand their "direct" investment in their own lines of activity abroad, by buying plantations and factories and allied businesses. As the phase of prosperity goes on, however, the resources of the banks begin to be strained a little — not absolutely perhaps, but certainly relative to their previous position. With the increase of liabilities, reserve ratios necessarily fall, and the banks' capacity for further lending declines. At such a time large excesses of imports will exercise a more definitive effect. No less tho no more than purely domestic operations, they place further burdens on the banking system, further strain; and, in ways that we

have already examined, they dilute and weaken the demand of consumers at large, for further imports themselves as well as for domestic products. Under such conditions, finally, large gold exports may have a critical importance.

Evidently the turning point may come fairly early, but it may also be long postponed; and while its arrival may in some cases be a direct product of the foreign-exchange and payments situation, in others it may seem to have little obvious connection. It depends partly on the policy of the central banking authorities, but chiefly on the relative importance of foreign trade in the domestic economy. At one extreme are such countries as England. Foreign trade, in the broad sense, is of absolutely dominating importance in English economic life. For England, the movements of foreign trade *are*, in large part, the movements of the national economic life. A protracted excess of import (debit) operations would vitally affect the whole economic structure. With England's highly organized banking system, the necessary correctives would be applied in ample time; the movements of the foreign exchanges and the possible outflow of gold would play their familiar trigger-like rôle; and the resulting reversal of the domestic situation would carry with it eventual restoration of the international equilibrium. Rising discount rates, credit contraction, falling prices, and the disappearance of the import excess are the main steps in the sequence. Here, the connection between a disequilibrium in international payments and the development and application of domestic correctives is direct, and usually swift.

At or near the other extreme are countries like the United States. For us, the aggregate of our importing (debit) operations of all kinds is still, on the average,

less than 10 per cent of our domestic production. It would be unreasonable on the face of it to expect changes in so small a fraction of our general economic life to produce any great and abrupt shifts in the trends of domestic business and finance as a whole. Disequilibrium in the present American balance of payments can at most accelerate or retard somewhat the progress of those more important movements, which are almost exclusively domestic in their origin. Indeed, a given disequilibrium may even be adjusted in apparently complete independence of these last movements. A relatively small excess of imports, for example, may be corrected by exchange-rate fluctuations and gold flows alone, without producing any visible effect at all upon the general domestic situation. This seems to have happened in November, 1927, in our trade with Brazil. But a large and enduring excess, for which these correctives are inadequate, would presumably have to wait on the ebb and flow of domestic affairs, on the movements of the general American credit and business cycle. Not until the downturn in the cycle — a downturn which might itself be hastened, but certainly would not be "caused," by the international payments situation — would a large and continued excess of imports find any sure corrective in the reversal of domestic conditions.

Stripped of detail, therefore, what we have said amounts to this. The correction of a large and continued excess of imports (debits) cannot be explained independently, but must be linked up with the general economic situation in each country, and with the general ebb and flow of its business activity. There is continuous action and interaction between the domestic and the international situation, each working on the other. The greater the importance of international

trade in the national economic life, the closer will the connection be. Where foreign trade is a dominant factor, the correction of a large import excess through changes in the domestic situation will be comparatively quick, and in a sense "automatic." Where the relative importance of foreign trade is small, on the other hand, the correction of such excesses is slow, and has to wait for the eventual self-generated reversal in the domestic situation itself.

This linking of the correction of import excesses with the cyclical movement of affairs in the importing country seems the more necessary, because an import excess, if on any large and enduring scale, is usually itself a product (and to some extent also a cause) of that very cyclical movement. It is therefore no more than reasonable to conclude that the correction of the one goes with the correction or reversal of the other; this, of course, without commitment to any one form of cyclical theory.

Finally, one important qualification must be added to what has thus far been said. The conclusions reached, or at least the particular form in which they are stated, rest in considerable part on the assumption that the importing country has a reasonably large money market of its own; and that bills drawn on it, payable in its currency, command a reasonably wide market abroad. For the leading large countries this is, of course, the actual situation, but for many of the smaller countries, especially the newer and less developed ones, it is distinctly not. The consequences may be rather puzzling at first sight. To imagine an extreme case, if such a country had been importing so heavily that its balances abroad were wiped out, and then still continued to import, it might well be unable to sell any important quantity of its own bills abroad. It would then be literally

incapable of making the necessary foreign payments, except in specie. On the other hand, a country like that, which finances most or all of its international trade through foreign money markets and in foreign currencies, will usually have a relatively large volume of balances abroad, which has been built up by its own earlier exports. Hence there is a larger measure of elasticity in the situation than at first appears. The correctives of the import excess nevertheless remain essentially what they were in the type of case hitherto considered. They are the unfavorable exchanges, the possible outflow of specie, and the shift in currently available purchasing power from the hands of the general consuming public to the banks. If these changes fail to be effective, however, or if the banks fail to take the necessary steps in time, the foreign exchanges will fall indefinitely far beyond the gold point, and the country will in fact, if not admittedly, go off the gold standard.

III

Consider next the general process of exportation. The problems to which exportation, and indeed all international credit operations, give rise are distinctly simpler than those centering around the process of importation, and the correction of excesses runs in more obvious terms.

The immediate effects of exportation in itself, viewed without reference to its size or its relation to importation, are fairly evident. If payment is received in the form of a bank draft sent by the foreign debtor, and running in the exporting country's currency, the encashment of the draft in the exporting country does not alter the amount of purchasing power currently available there (except in the case, negligible for present purposes, of the finance bill). It merely redistributes the

existing purchasing power, transferring the ownership of domestic bank balances from foreigners to the exporters. In the case of commodity exports, this in turn reimburses the exporters for their outlays on wages and materials during the production of the exports; and thereby increases the amount of purchasing power currently in the hands of the people at large, at the expense of the foreign exchange banks. Particular banks may either gain or lose by this redistribution, but the position of the banking system as a whole is not altered, and the average reserve ratio is not changed (except in so far as additional cash may be drawn into circulation). The receipt of interest and profits from abroad has the same effect, as does the export of services; and so too, tho less directly, does the export of securities — or, in more general terms, the "import" of capital.¹

Evidently there is a limit, however, to the extent to which the exporting country can receive payment through the use of such drafts. The limit arises from the fact that the balances held in the exporting country by foreigners are usually small in size relative to the volume of business done, and will not ordinarily be allowed to fall below a certain agreed minimum. A large and continued excess of exports will therefore soon bring these balances down to the minimum, as a rule, and will compel a resort to some other means of transferring the necessary payments. At the same time, the foreign exchanges will move favorably to the exporting country as the balances fall, and may even reach the gold import point.²

1. It should be pointed out, incidentally, that bank drafts used for these purposes do not enter the money market, as a rule, since they are usually drawn for sight, and are presented for encashment as soon as received.

2. If the exporting country has no large money market of its own, and if bills drawn on it do not command a fairly wide market abroad, payment by drafts drawn on it will of course be resorted to little, if at all.

If, instead of this, payment for the export is effected by the use of a bill drawn by the exporter on the foreign importer, and running in terms of the foreign (importing) country's currency, the results are quite different. The discount or collection of such bills increases the amount of purchasing power currently available in the exporting country directly and in equal degree, precisely as does the discount of domestic bills.³ The only qualification here is that, if the exporter has already borrowed from his bank to finance the production of his exports, then the increase in purchasing power resulting from the discount or collection of the bill merely serves to replace that increase which was created by the earlier loan, and which is extinguished at its repayment. Moreover, this increase in purchasing power is not accompanied by any increase in the volume of commodities, services, or securities offered for sale in the exporting country. If the increase in exports is large and continued, the resulting steady increase in the amount of purchasing power currently available in the hands of consumers will therefore be a condition working on the side of a general increase in demand and prices. And the stimulus to prices is the more likely to be effective, because a large part of the increased purchasing power is paid over, in the form of wages, to the final consumers of domestic products.

With respect to the banks, there are forces working in both directions. The continued discounting or collection of exporters' bills of this sort increases the liabilities (deposits) of the foreign exchange banks directly.

3. Evidently it makes no difference, in this respect, whether the exporters' bills are drawn in the foreign or in the local currency. In either case the volume of domestic purchasing power is increased by the discount or collection of the bills. The effect on the banks' reserve position, discussed in the text below, depends on the arrangement that the exporting country's acceptance banks make with the foreign banks.

Against this is, of course, to be set a corresponding increase in their assets; but the new assets consist of balances in foreign countries, received from the discounting or cashing of the exporters' bills there. Up to a certain point at least, most Continental banks would regard this change as an improvement in their general reserve position, whereas most American banks would not. In any event, the ratio of liabilities to *domestic* reserves becomes increasingly unfavorable, a tendency augmented for the banking system as a whole in so far as the banks assist in the production of additional exports by granting additional loans.⁴ But a continued accumulation of such foreign balances soon becomes cumbrous, and the exporting country's banks become less and less willing to acquire them. The result is again a rate of exchange increasingly favorable to the exporting country, and possibly gold imports.

If we now consider together these two principal methods of receiving payments for exports, and regard them as being used simultaneously, it is clear that a large and continued excess of exports (credits) sets up conditions which, much more certainly than in the case of an excess

4. In any one case, the increase in liabilities resulting from financing the production of the exports disappears when the exporter receives his payment, and is then replaced by the increased liability of the foreign exchange bank to the exporter. A single export operation, that is, does not give rise to *two* sets of bank liabilities — deposits — outstanding simultaneously. But if, instead of this, we consider the aggregate of the export operations going on at a given moment, it is evident that the financing of exports currently in process of production and the financing of international payments for *other* exports, previously produced, are going to overlap. The aggregate volume of bank liabilities — deposits — currently outstanding, and originating in export operations, will, therefore, exceed the volume of exportation actually taking place currently. When the volume of exportation itself increases, the volume of bank liabilities will increase by more than an equal amount, since these liabilities are affected both by the quantity of actual exports currently being shipped and paid for, and by the quantity of potential exports currently in process of production. A *decline* in the volume of exports is similarly apt to produce a more than equal decline in the volume of bank liabilities.

of imports, act as increasingly powerful correctives of the situation. One corrective lies in the fact that the continued transfer of both foreign and domestic balances from the ownership of foreigners to the ownership of the exporting country's banks has an immediate effect upon the exchanges, and may lead to gold flows. Indeed, these flows may themselves suffice to restore the equilibrium of international payments, if the original disturbance is not too large or too long-lived. The other principal corrective lies in the expansion of the volume of purchasing power currently available, especially in the hands of consumers, in the exporting country. This expansion, if on an important scale and if continued, will lead to increased general demand and to rising prices, thus making exports dearer and diminishing their volume, while at the same time stimulating imports. Against this movement toward expansion and rising prices, however, must be set the fact that the general position of the banks, especially with respect to their domestic reserve ratios, is gradually made more and more unfavorable by the growth of exportation. Their liabilities are increased steadily, both by the discount or collection of exporters' bills and by the granting of new loans for the production of the additional exports, without there being any increase whatsoever in at least the domestic part of their reserves. Taken by itself alone, it is true that this condition would eventually require a *contraction* of credit; and that would not correct the current excess of exports. It would check exportation, but it would check importation even more. An initial expansion of this sort, however, can usually go a considerable distance before it becomes a matter for concern. Moreover, should the foreign exchanges rise to the specie point, the resulting inflow of gold will at once temporarily improve the domestic

reserve position of the banks in the aggregate, and will give their willingness to expand credit a new lease of life — thus further stimulating the current upward movement of general prices.

As in the case of an excess of imports, however, the precise time and manner in which this rising tendency in general prices actually becomes definitely effective in correcting the export excess, depends in considerable part on the current state of general business and credit in the exporting country, and on the relative importance of foreign trade. If foreign trade plays only a small part in the national economic life, any correction depending on a general rise of internal prices will presumably have to wait for the rising movement of the domestic business cycle itself. But if foreign trade plays a dominant rôle, the expansion of exports may well be itself the very thing that swings the domestic cycle upward, and will thus in the most literal sense produce its own corrective. Rising prices, decreased exports, and increased imports will then restore the equilibrium in international payments. That this corrective movement will actually occur is the more probable, because a large and continued expansion of exports, in a country where foreign trade is a dominant factor, is most likely to appear only in the stages of general recovery and reviving prosperity. It is unlikely to develop in the later stages, when prices are already high and when credit is already beginning to tighten.

To this point we have considered the two sides of the balance of international payments situation separately, first following the effects of import (debit) operations treated independently, and then the effects of export (credit) operations. In actual fact, of course, the two go on simultaneously. In some respects their effects

upon the internal credit and price situation offset one another, but in other important respects they do not. A rough picture of the actual composite situation can be formed by bringing together the results secured in the preceding pages.

Paradoxically enough, increased importing operations and increased exporting operations have *similar* immediate effects upon the general banking situation in the country concerned, tho in unequal degree. An increase in *either* produces an increase in the assets and liabilities of the banking system as a whole, and thus leads to an impairment of the domestic reserve position; precisely as does an increase in the volume of purely domestic trade.

Increased exportation does this in what is almost a one to one ratio, if the increase goes on beyond a certain point. It is, of course, true that if the additional exports are paid for out of foreign-owned balances in the country, there is merely a transfer of the ownership of such balances from foreigners to the local exporters, without any increase in the total. But so far as the exports are paid for by the discount or collection of exporters' bills, bank deposits — bank liabilities — are increased exactly to correspond. Precisely these latter changes appear in growing degree as the export excess rises. As the size of the export excess grows, the balances owned by foreigners in the exporting country dwindle, and payments are effected increasingly by means of exporters' bills payable abroad, rather than by drafts sent by the importer and payable in the local currency. The banks, of course, then acquire an equivalent increase in assets, but these assets are located abroad: they are foreign bank balances, or other obligations of foreigners. The general *domestic* reserve position is therefore weakened. And there is a further im-

pairment of the domestic reserve position in so far as the banks finance the original production of the additional exports. With respect to this financing, for the time being at least, there is no offsetting increase in reserves at all.

Increased importation, on the other hand, does not increase bank liabilities *directly*, but does increase them indirectly through the resulting increase in new loans. The new loans come partly from the discounting of bills arising from the importation, partly from the financing of the actual shipment, distribution, and manufacture of the imports themselves. This increase is less than the original increase in importation, for by no means all the imports are financed in the importing country; but it may nevertheless reach a very considerable size. It too entails, of course, a corresponding weakening of the banks' general reserve position. Moreover, demand and short-term obligations to foreigners come to make up an increasing proportion of the liabilities of the banking system. This further increases the vulnerability of the system, for sudden foreign demands cannot be foreseen and guarded against as easily as domestic demands.

Now the banking system as a whole has only a given lending capacity at a given time. An increase in the volume of international trade operations, whether imports or exports or both, therefore entails a diminution in the power of the banks to make further loans designed to finance domestic production for domestic consumption. If the banks' lending capacity is already strained, this diminution will acquire a critical importance. Exports and imports have no mutually offsetting effect here. Even if exactly equal, a change in their combined size weakens or strengthens the reserve position and the lending capacity of the country's banking system in roughly equivalent degree, precisely as does a change in the volume of purely domestic business.

In their effects upon the amount of purchasing power currently available in the hands of the final consumers in the country, however, exports and imports do have substantially offsetting effects. Increased exportation leads to a direct increase in this aggregate purchasing power, but produces no increase in the quantity of things offered for sale. Increased importation leads to an increase in the quantity of things offered for sale, but produces either no increase at all in aggregate purchasing power, or else an increase which is much less than in proportion to the expansion of imports, — and which is largely *not* placed in the hands of the final consumers. The first condition evidently works for rising prices, the second for falling prices. When export operations in the aggregate are equal to import operations in the aggregate, a rough equilibrium is, therefore, reached. If the two rise or fall together, the relation of the aggregate amount of purchasing power currently available in the country to the quantity of things offered for sale is not substantially changed, and the general level of prices therefore remains stable.

Finally, there is the question of an *excess* of imports or exports, and of the resulting disequilibrium in the country's international payments. Relatively small and short-lived disturbances in the equilibrium present no great problem. They are adjusted by means of movements in the foreign exchange rates and, when necessary, by specie flows. Large and enduring disturbances, on the other hand, require more drastic correctives. The general level of credit and prices in the country must shift, if the international movement of goods and services and capital is to be altered materially. It is impossible, however, to regard these general and far-reaching correctives as operating *in vacuo*, or even to treat the original disturbance as an independent

phenomenon. Full account must be taken of the general state of affairs in the country, of its current position in the business cycle, and, above all, of the relative importance of foreign trade in its national economic life.⁵ When this is done, we come out with explanations of the maintenance of equilibrium which are rather different for different countries and at different times. To repeat what has been said before, a large and continued disequilibrium in the international payments of a country where the relative importance of foreign trade is small cannot fairly be regarded as ever being independently self-corrective. The correction must wait, rather, on the tides in the general domestic business situation. Where the relative importance of international trade is great, on the other hand, the situation is not the same. Here international exchange is a dominating factor, and may well set the pace for domestic activities. In such countries, the movements of foreign trade are often nearly identical with the general movements of domestic business. A serious disequilibrium in international payments almost necessarily entails a corresponding mal-

5. Account must also be taken of the nature and national importance of the particular imports and exports in question. Presumably the adjustments and alterations which can be made in the balance of payments are not the same for raw materials and foodstuffs as for manufactures; nor the same for a manufacturing country as for a raw-material country. Consider the especially familiar case of Germany, a country which to a considerable degree must import first in order to export afterwards; and contrast this with the elastic and unstrained position of the United States.

It will be observed that nothing has hitherto been said of the changes in *other* countries which accompany a disturbance in the balance of payments of the selected country. These changes *may* be just opposite to those in the country under consideration, and if so, will correspondingly expedite the restoration of international equilibrium; but they may not. A large movement of commodities from country A to country B may give country A an export excess, but may at the same time simply restore equilibrium in country B's foreign trade. This situation, frequently encountered in practice, is of course due to the fact that many countries are engaged together in trade at the same time, not merely two, and that they are often in different stages of their respective business cycles.

adjustment in internal affairs, and the corrections in the two cases follow similar and intimately related paths. Where these conditions prevail, it would be almost as accurate to say that the international situation "corrects" the internal situation as to say the reverse. Each, in point of fact, works powerfully on the other.

IV

This study of the general nature of the process by which equilibrium is maintained in the balance of international payments has led to certain fairly definite conclusions, tho it has been necessary to state them in somewhat qualified form. The principal conclusion is that any large and enduring disturbance in the equilibrium produces, and is in turn corrected by, changes in the general level of credit and prices in the country concerned; changes which then react upon the international movements of goods and capital and services. The principal qualification is that the directness and immediacy of this correction depends on the relative importance of international trade in the country's national economic life. This factor is decisive also in determining whether the dominant "cause" of the actual corrective movement in prices and credit is to be sought in the international situation, or in primarily domestic conditions; and in determining the closeness of the relationship between the occurrence and correction of an international disequilibrium on the one hand, and the cyclical movements of each country's general business activity on the other. In any event, however, and regardless of the specific "causal" connection involved in each particular case, the appearance of a major disequilibrium in international payments, of a later corrective movement in domestic credit and prices, and the eventual consequent restoration of equilibrium, move along in a sequence of

related events — a sequence more or less closely knit according to the country involved. This general proposition is borne out by everything we know of recorded disturbances in the past.

With this in mind, therefore, we now come back to the post-war history of the balance of payments of the United States, a country where the *relative* importance of foreign trade is not great. Does that history support the conclusions we have reached; and do they, in turn, help to explain things that were hitherto obscure? An answer can be given, but by no means an unequivocal one. Nor is the answer quite the same for the two main divisions of the post-war era. The period 1919–21, it will be remembered, was quite unlike the period 1922–26. The former saw the violent general upheavals that were produced by the world-wide expansion and collapse immediately after the war, while the second marks the restoration of comparative stability in our internal affairs, and the resumption of a more nearly normal rate of growth. A roughly parallel division is found in the development of the American balance of payments.

In the period 1919–21, the *net* exportation of capital on account of principal declined abruptly and continuously, from a total of nearly \$3,000,000,000 in 1919 to less than \$1,000,000,000 in 1921. In so far as the movement of capital was an independent and dominant factor in the balance-of-payments situation at the time, the general conclusions hitherto reached would lead us to expect that this large decline in our net capital exports — that is, this decline in our international *debits* — would have had a stimulating effect on the general situation within the country. We should have expected to see either a steady rise in prices, or a relaxation in the rate of decline if prices were then falling, and a steadily unfavorable movement of the commodity balance of

trade.⁶ An examination of the figures, however, shows that while one of these changes actually did work out, the other most distinctly did not. The huge excess of commodity exports carried over from the war fell uninterruptedly, and even more sharply than did the net export of capital; for altho gross exports continued to increase until 1920, gross imports increased still faster. Large gold imports also occurred in 1921. (See Charts I and II above.) This set of changes is of course entirely consistent with the expectations of our general theory. But the movement of prices was not: far from it. It is true that wholesale prices continued to rise well into 1920, but thereafter they *fell*, and with dramatic suddenness. The decline amounted in barely a year to over 40 per cent of the 1920 maximum. Yet so far as the balance-of-payments situation was concerned, prices should apparently have continued to rise! A similar upward movement in 1919 and 1920, followed by a sharp fall in the latter part of 1920 and 1921, also took place in bank clearings, debits to individual accounts, and in most of the other indices of general business activity. These violent fluctuations have no clear relation at all to the quite uniform and steady movements of the *net* totals in the balance of payments. Finally, there is no evidence of any such redistributions, in the amounts of American purchasing power currently available, as the successive changes in the balance-of-payments situation, taken by itself alone, ought apparently to have produced.

The explanation of these apparent contradictions is twofold. In the first place, it is entirely evident that

6. The actual and the possible changes in the interest and service items will not be examined here. These items have been extremely insensitive (see Chart II above), and there is no reason for thinking that even large fluctuations in the *other* items would be reflected quickly in them.

the balance-of-payments situation did not play a large or even a very perceptible independent part in determining the course of general events within the United States — in determining the domestic movements of credit and prices. In view of the small relative importance of foreign trade in our national economic life, however, this is not unnatural. In the second place, *two* major forces were apparently working simultaneously on the American balance of international payments, not one alone. The first was the fluctuations in the foreign demand for our capital; the other, which seems to have been largely independent of the first, was the fluctuations in the foreign demand for our commodities. In point of historical fact, the two sets of fluctuations appear to have roughly offset one another in both timing and size. This coincidence kept the balance of payments itself substantially in equilibrium, despite the magnitude of the changes in its constituent items, and prevented these changes from having any marked effect on internal conditions.

Indeed, a rough similarity between the international movements of American capital and the movements of American commodities might well have been expected to develop from the world situation prevailing at the time. That situation is most easily described by resorting to rather general terms. Loosely speaking, the rest of the world went through much the same ups and downs in 1919-21 that we did. But the rest of the world, especially Europe, had been drained of goods and capital by the war, and had turned to us for further supplies of both. When the war finally ended, Europe's recovery was therefore *relatively* more rapid than ours, because Europe had further to go. In consequence, Europe's capacity to supply goods and capital also increased *relatively* more rapidly, in the first two or three years at

least, than did ours. During the war we had supplied goods and capital, not only to Europe, but also to those other parts of the world which had previously been dependent on Europe. Then, when Europe began to recover, it was able to supply not only a steadily increasing part of its own needs but also an increasing part of the needs of the rest of the world. The world's aggregate demand for *both* American capital and American commodities therefore fell off, at roughly equal rates and for substantially the same reason — namely, the recovery of Europe. This was especially true of the period through 1921, but it was also true, to a lesser extent, through 1923. Finally, our own rapid internal expansion in 1919 and 1920 caused us to increase our commodity imports very heavily — imports, be it noted, of kinds in the main quite different from the kinds of goods we were exporting.

The aggregate result of all these influences was that our net export balances of *both* trade and capital showed a continuous decline in 1919–21.⁷ Moreover, the declines in the two were sufficiently near to being both equal in size, and also synchronous, to prevent any large disequilibrium from developing in the general balance of payments itself.⁸ The balance-of-payments situation hence had no marked effect upon the levels of American credit and prices; and there was no need for any widespread

7. The fact that these net changes took place so evenly, in the face of very large fluctuations in the absolute size of the gross items themselves, is an excellent illustration of the familiar fact that changes in the *net* items of the balance of payments give evidence of changes in only the *relative* international demands for things, largely regardless of the fluctuations in the absolute size of these demands.

8. This parallelism was greatly increased by the fact that, especially just after the war, many loans were, by original intention or by other agreement, expended for the direct purchase of American goods; and indeed were often made simply in order to pay for current or contemplated purchases. When this happens, of course, no balance-of-payments problem arises. Debits and credits in the international account go directly together.

corrective movement. In other words, at this time there was no real and enduring balance-of-payments problem at all.⁹

In the period since 1921 there have likewise been puzzling and almost paradoxical developments, but of a somewhat different character. The net movement of capital on account of principal has fluctuated quite widely. It showed a continuously declining net export for a time, which turned into a small net import in 1923. Then there was a large and increasing net export through 1925, and finally a rather smaller net export in 1926. The commodity balance of trade (see Chart I) moved in strikingly close parallel to these successive changes. The inference seems inevitable that there was a direct "causal" connection between the two. But if we turn to the contemporary movements of American credit and prices for confirmation of this inference, the results are negative. At times the level of American prices moved, tho in a very small degree, in the ways which the balance-of-payments situation apparently required. At other times it quite distinctly did not; and at all times since 1921 the characteristic feature has been its massive stability rather than its fluctuations. So, too, for other significant indices of general conditions. Bank clearings and debits to individual accounts showed an almost equally stable *rate of growth*, and production figures increased fairly continuously, except in 1924. This latter decline, however, does not correspond to any marked new development in the balance-of-payments situation at the time (see Chart I). The movements of

9. It was of course true, especially in 1920 and the following years, that a good many American exporters had trouble in collecting payments from foreign importers. But the fact that these credits were "frozen" was more the result of depressed conditions within the importing countries than of the state of the American balance of payments or of the foreign exchanges; and in any event they were not a large proportion of the aggregate of our foreign transactions.

gold also show a quite uniform tendency, with no significant fluctuations. The net imports of gold declined steadily, and turned into a net export in 1925. Finally, just as in the period 1919-21, there is no clear indication of any such redistributions of the amounts of purchasing power currently available in the country as the fluctuations in the balance of international payments would apparently lead one to expect.

This stability of internal credit and prices in the face of a series of marked changes in the balance-of-payments situation, and over so long a period as that from 1922 to 1926, again leads inevitably to the conclusion that the changes in the balance of international payments must have had little or no effect upon internal conditions. That is, the two must have been largely independent in their movements. But if this is so, then the successive changes in the net items entering the balance of payments must in turn have substantially offset one another as they occurred, just as they apparently did in 1919-21. A common antecedent influence must have been acting simultaneously, and with virtually equal effect, on both the net export of commodities *and* the net export of capital. Neither item had to adapt itself to the other's fluctuations, for the two sets of fluctuations were roughly coincident and compensating by their very origin.

It is useless, however, to probe in detail for the nature of this antecedent condition. The changes that have occurred in the net movements of capital and commodities during the last few years, altho of considerable size, have not been large enough to point unmistakably to any one conclusion. In general terms, the common source of the changes has again presumably been the fluctuating economic fortunes of Europe. To 1923, the continued economic recovery of most of Europe caused

a steady decline in the general world demand for both American goods and American capital; then the various currency stabilizations in 1924 and later years, with their consequences of temporary domestic depression and enlarged opportunities for both foreign investors and merchants, increased the world demand for a time; and finally, since 1925, demand seems to have been falling off again. The changes in the gross export of capital to this country from the rest of the world, especially from Europe, to repay earlier loans and to purchase securities as investments, can also be loosely explained by the movement of events in Europe itself. The changes in our imports of commodities, on the other hand, seem to be related more closely to the fluctuations in our own industrial activity. The aggregate effect of these various changes is mirrored in the rise and fall of our net commodity and capital balances, for they are the indices of changes in *relative* demands.

If we now review the whole period from 1919 through 1926, it becomes clear that ever since the war a curious and almost unprecedented situation has existed. Both the gross and the net items in the American balance of payments have shown very large changes, and even outright reversals of movement; yet these changes seem to have produced no material effect whatsoever on the general levels of domestic credit and prices, or on any of the other important indices of general domestic conditions. The volume of credit and the levels of prices have, it is true, changed widely from time to time, but these latter movements have had no apparent relationship at all to the even greater changes in the principal items of the balance of payments. Yet the balance of payments itself has always remained substantially in equilibrium. At first glance, the situation thus seems to present an impossible paradox.

If we turn back for assistance to our previous general analysis of the maintenance of equilibrium in international payments, however, a solution of the paradox can be worked out. Since the equilibrium of payments was actually maintained, and since the wide fluctuations in the various net items of the balance failed to be accompanied by any of the corresponding alterations in domestic conditions that a protracted international disequilibrium usually produces, the only possible explanation evidently is that the great changes in the balance of payments itself must, from the very nature of the conditions which gave rise to these changes, have roughly offset one another at the times when they occurred.

To put it concretely, the ebb and flow of Europe's economic fortunes, and the resulting alterations in the general state of world supply and demand, together with the much smaller influence exerted by the fluctuations in American business activity, must have affected our net exports of goods and of capital in substantially equal degree. That is, the world's *relative* demand for our goods — its demand for our goods, measured against our demand for foreign goods — must have changed in ways and at times loosely corresponding to the changes in the world's *relative* demand for our capital. There has therefore been no real balance-of-payments problem at all, as yet, for the changes in our international debits seem, in point of actual fact, to have moved quite closely with the changes in our credits.

This general conclusion is intellectually rather unsatisfactory, for one dislikes having to say, in Professor Taussig's phrase,¹ that things "just happened so," without being able to assign any single completely adequate reason for the coincidence. But it is apparently the only way of accounting for the almost total absence of

1. See his *International Trade*, p. 332.

a discernible connection between the movements of the net balance of payments and the movements of internal credit and prices; and for the absence of any clear lag or precedence between the changes in the net capital items and the net commodity items of the balance itself. In other words, the general correctives described in earlier pages have not yet been called into play, at least on any scale large enough to make their action unmistakable. Of the two major factors in the international situation, changes in commodity movements and changes in capital movements, neither has been the "cause" of the other's fluctuations, except in so far as the proceeds of foreign borrowing have been spent directly by the borrowers themselves for American commodities. Rather, the two sets of changes have been, directly or indirectly, the common results of a common antecedent condition, the fluctuating state of economic affairs in Europe.

This explanation is necessarily incomplete, and it leaves many problems unsolved. Of these, one arises from the fact that the variations in the individual demands of the several countries for American goods, and even of the several continents, have not been the same as the variations in their individual demands for American capital. It is only the *combined totals* of the two sorts of demand which have moved together. A rather subtle adjustment of international balances has evidently been involved. Another problem is that the steady increase in the volume of American imports since 1921 seems to premise a substantial rise in at least this class of prices; yet the general national price level has remained stable, and, if anything, has declined a little. Another is the absence of any clear indication that the marked changes in the *aggregate size* of our international dealings — export and import operations combined —

have altered either the volume of our bank deposits, or the general distribution of our national purchasing power. With respect to the last two problems, however, the explanation probably lies in the small *relative* importance of international trade, even now, in our national economic life.

These, however, are comparatively minor difficulties. The central question is that of the maintenance of equilibrium in the balance of payments. Here the results of our inquiry have been essentially negative, so far as concerns American history since 1919. The machinery for the correction of disturbances of course exists, tho the small relative importance of foreign trade would probably make it work slowly: the correction would have to wait, rather, on the cyclical movements of American credit and prices. But this machinery has not yet been brought into operation on any significant scale. Whether because of a common origin, because of some other hitherto unsuspected relationship between them, or because of pure accident, — but most probably the first, — the great changes in our balance of payments since the war have substantially offset one another as they occurred. The course of our internal development, altho profoundly altered by the progress of economic recovery and collapse in the rest of the world, has therefore not been subjected to the special distortions and strains that proceed from a large and enduring maladjustment in the balance of international payments itself.

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A NEW INDEX NUMBER AND ITS MEANING

I. Mr. Snyder's broad Index number, 434.—II. There is no one concept of price level that serves all purposes, 435.—III. The index appropriate for the measurements of real income, 436.—IV. That for deferred payments, 441.—V. Should the price index take account of producers' goods? 443.—VI. The price index with reference to business cycles, 445.—VII. The Snyder index as means of computing the rapidity of circulation of money, 447.

I

STATISTICAL knowledge has reached such a high standard of completeness in this country that it is possible nowadays to perform computations which surpass the boldest expectations of statisticians and economists two decades ago. One of the most interesting recent achievements is the calculation of a broad index of the general price level by Mr. Carl Snyder,¹ to whom our science is already highly indebted for a series of studies in quantitative economics. He now attempts to cover in a single index number all types of goods and services included in business and financial transactions. This broad composite of prices includes retail as well as wholesale prices, prices of services as well as of com-

1. Mr. Snyder has already worked for some years in this line, and has communicated from time to time the results of his studies to the public. See "A New Index of the General Price Level from 1875" (Quarterly Publication of the American Statistical Association, June, 1924); "New Measures in the Equation of Exchange" (American Economic Review, vol. xiv, no. 4); "Business Cycles and Business Measurement" New York, 1927. His last contributions, to which I especially refer in this note, are briefly summarized in Monthly Review of Credit and Business Conditions, Second Federal Reserve District (Feb. 1, 1928), p. 13. For a more elaborate statement, see his article: "The Measure of the General Price Level," in The Review of Economic Statistics (Feb., 1928, pp. 40-52).

modities, prices of consumables as well as of producers' goods, of real estate, of labor. The components of the new index are enumerated as follows: (1) retail food prices, (2) rents, (3) other cost-of-living items, (4) industrial commodities at wholesale, (5) farm prices at the farm, (6) transportation costs, (7) realty values, (8) security prices, (9) equipment and machinery prices, (10) hardware prices, (11) automobile prices, (12) composite wages.

Mr. Snyder's experiment seems to me extremely interesting and suggestive. It must not merely be regarded as a masterpiece of statistical technique, — which it undoubtedly is and for which it deserves the highest admiration, — but it must also be considered from the economic point of view. The question must be raised: what conclusions may be drawn from the fact that this broad index indicates a rise or a decline of the general price level? I venture to make a few remarks in respect to its economic interpretation, my object being not to criticize Mr. Snyder's admirable statistical achievement, but to comment on its theoretical significance.

II

The general price level is not a given, self-evident fact, but a theoretical abstraction. It is a scientific tool which has to serve for certain scientific and practical purposes, such as comparison of real income, establishment of a standard of deferred payments, guidance of monetary policy. It is often tacitly assumed that there is only *one* concept of price level which serves all those purposes; that there exists *one* tool of this sort which could be applied for the computation of real wages as well as for the establishment of a standard of deferred payment and as a guide for monetary policy.

This assumption is, however, erroneous — at least, as a matter of *a priori* reasoning. For each purpose a separate concept of price level must be established. An economically relevant definition of price level cannot be independent of the purpose in mind, and for each purpose a separate index number must be computed. It may happen — but rather by statistical chance than from theoretical necessity — that those distinct price levels coincide, entirely or nearly so, and that, therefore, a general-purpose index number — as W. C. Mitchell has appropriately called the concept — is attainable. Examining a given index number in respect to its economic significance, we must therefore proceed to consider, one after the other, the particular purposes which an index number has to serve, and to determine for which of them a given index number is appropriate.

III

Let us now first discuss the problem if the purpose is the computation of real incomes. The problem may be put in this way: we have to compare two incomes at different places, or in different periods, with different price systems. In order to do so, we cannot simply compare the money incomes, — let us call them I_0 and I_1 — but we have to multiply I_0 by a factor which indicates the change or difference of the price level between the two periods or places. This factor now is furnished by the price index. It is obvious, however, that there cannot exist a general index of this sort which would apply for the comparison of real income of all social classes. Each class, and, strictly speaking, each person, spends his income in a different way and consumes different goods; and for each individual different commodities and different prices are relevant. If, for

example, prices of articles of luxury have fallen, and a general price index indicates therefore a fall in the price level, it would be wrong to conclude from this fact that the real income of the poor has become greater. For the man who does not smoke, the price of tobacco is immaterial. It follows that in strictness a separate price index ought to be computed for each individual or, at least, each homogeneous group of persons. Moreover, such an individual price index must obviously contain prices of consumers' goods only, and of those consumables on which the individual spends his income.

It is not necessary to discuss here in detail the mathematical methods and the formulae which must be used in calculating such an individual price index. I make only a few introductory remarks of a general character.²

The difficulties arise out of the fact that the individual spends as a rule his income in different ways in the two places or during the two periods compared — unless, of course, all prices have remained constant, in which case we need no calculation at all. We thus have two different combinations of goods — the combination which the individual bought and consumed in the first year and a similar combination for the second year. Shall we adopt the first or the second as the basis for our calculation? And shall we look at $\frac{\sum p_2 q_1}{\sum p_1 q_1}$ (Laspeyre's formula, using the combination of the first year), or at $\frac{\sum p_2 q_2}{\sum p_1 q_2}$ (Paasche's formula, using the combination of the second year), as the true measure of the variation of the price level? From the point of symmetry the two

2. For a detailed discussion, see my monograph on index numbers: *Der Sinn der Indexzahlen. Eine Untersuchung über den Begriff des Preisniveaus und die Methoden seiner Messung* (Tübingen, 1927), pp. 77-98.

formulae are equivalent, and a formal criterion cannot decide which of them has to be chosen. In such a situation, where a reason for the choice between two formulae fails, it is usual in index theory to take a mean between them. A mean is always the last resort, the *pons asinorum* of the theory of index numbers.

This procedure seems to me highly unsatisfactory. A compromise between the just-mentioned fundamental formulae would be justified only under the assumption that the two fix the limits between which the true figure must lie. Fortunately this proof is possible. In spite of the fact that, so far as I know, it was constantly overlooked, it may be shown that — under certain assumptions which I cannot state here in detail — Laspeyre's formula fixes the upper limit and Paasche's formula the lower limit of the variation of the price level. The true figure must lie somewhere between, we do not know where. But because, as a matter of fact, the results of the fundamental formulae do not differ very widely, the error incurred cannot be great, if we look at a mean of

them, for example, the geometric mean $\left(\sqrt{\frac{\sum p_2 q_2}{\sum p_1 q_2} \cdot \frac{\sum p_2 q_1}{\sum p_1 q_1}} \right)$

(Fisher's ideal formula), as the true measure of the variation of the price level.

We must, however, face a difficulty which would lead us to inconsistent results. It is not very probable, but it may happen and has happened, that Paasche's formula gives a numerically greater result than Las-

peyre's formula: $\frac{\sum p_2 q_2}{\sum p_1 q_2} > \frac{\sum p_2 q_1}{\sum p_1 q_1}$. This would mean that

our upper limit lies below the lower limit and the lower limit above the upper one. If that happens, the question becomes so intricate and complicated that I cannot

discuss it here.³ But we may console ourselves by the consideration that this situation is very unlikely to occur; for it may be shown that — at least for consumables — there exists probably a negative correlation

between price—and quantity—relatives $\left(\frac{p_2}{p_1} \text{ and } \frac{q_2}{q_1}\right)$;

then $\frac{\Sigma p_2 q_1}{\Sigma p_1 q_1}$ is necessarily greater than $\frac{\Sigma p_2 q_2}{\Sigma p_1 q_2}$. This rests,

however, on this particular empirical correlation, and must be, therefore, carefully distinguished from the mathematical necessity — with which it was often confused — that the arithmetic mean is always above the harmonic mean.

We may, then, say — to return to the main question — that we are able to compute with fair accuracy the variation of the price level for a single individual. We must face, it is true, the possibility that the price level varies for different persons in different degree and even in different direction. For the one it may have fallen, for the other, risen; for the one the same money income yields the greater real income or satisfaction in the first year, for the other, in the second year. For our present purpose, however, we shall disregard this fact and assume that the individual price levels vary close together. It could be shown that this assumption is in reality fulfilled in high degree. Thanks to this *empirical fact*, we are justified in speaking of a general price level, and in this sense we can say, more by statistical chance than by theoretical necessity, it happens that there is a "general price level."

Now we proceed to the question whether such a broad index as has been constructed by Mr. Snyder fits

3. See, my above-mentioned book, pp. 95, 96.

for the comparison of real income.⁴ The answer must, of course, be negative. A real-wage index has to consist only of prices of consumables. But Mr. Snyder's index contains also prices of producers' goods, real estate, securities, and wages, and therefore it is not fitted for the comparison of real income. A monetary policy which had as its aim the stabilization of such a broad index would fail, consciously or unconsciously, to keep the price level constant in the sense that the same money income should bring the same real income, or the same satisfaction.

I am far from denying that in practice it may be convenient to use, as an abridgment and approximation for the theoretically correct index of retail prices of consumables, an index of wholesale prices. It is a reasonable hypothesis that, for short periods at least, their divergence is negligible. But this consideration does not apply in the present case. Mr. Snyder's index contains wholesale prices *besides* retail prices, prices of producers' goods *besides* prices of consumables; and, in addition, prices of real estate, securities, and — what is most important — wages. From a real wage index wages must be strictly excluded,⁵ as has already been pointed out by C. M. Walsh in his admirable book "The Fundamental Problem in Monetary Science," which deserves much more attention than actually is paid to it. Take the case of an economically advancing society. If prices are kept stable, progress must show itself in a rise of wages and other incomes. An index which contains prices as well as wages would indicate a

4. To avoid misinterpretation, I state again expressly that I treat the question for its theoretical significance, and that I know quite well that Mr. Snyder does not claim the applicability of his index for real income computations.

5. With the exception, of course, of wages for personal service, which are properly covered by the term "consumable goods."

rise of the price level, which is absurd, because evidently the same money income embraces the same real income,—prices, *ex hypothesi*, not having changed. We conclude then that, for comparison of real incomes, Mr. Snyder's broad index is not applicable.

IV

The same negative answer must be given in respect to the application of this broad index to the establishment of a standard of deferred payment. In this case the same index as for the foregoing purpose ought to be applied, as I shall proceed to explain.

When we speak of the standard of deferred payment in connection with a price index number, we have in mind a *particular* standard, the so-called commodity or tabular standard, which provides the preservation of the same purchasing power for money debts. Other standards are conceivable and have been occasionally supported; for example, the so-called cost or labor standard, which aims at the embodiment of the same amount of "cost value" in equal sums of money; in simpler words, which guarantees the same command over labor or productive agents in general. A good deal of the enormous literature which was evoked by the movement for bimetallism in the second half of the last century was devoted to the discussion of the right standard for this purpose.⁶

The underlying question is this: in an advancing society, where wealth and real incomes are increasing, what should be the behavior of money debts? If money debts are kept constant in respect to purchasing power,—that is, if we adopt the commodity standard and keep the price level stable,—economic progress is to the

6. I have given a short survey of the different opinions, their theoretical premises and practical conclusions, in my above-mentioned book, pp. 104-107.

debtor's benefit. If we adopt the labor standard, if the same amount of money represents the same command over productive forces measured in physical units, — a very vague concept indeed, — the purchasing power of money debts increases (since labor becomes more effective in an advancing society); and the benefit of progress enures to the creditor class. There are intermediate standards, the effect of which is a division of the advantages of progress between debtors and creditors.

If now we adopt the commodity standard, wishing to adjust money debts to the fluctuations of the purchasing power of money (the reciprocal of the price level), we may use the same price index as for the comparison of real income — an index of retail prices of consumables. If the *same* money income yields the same real income, the price level has not changed and money debts have to remain as they are. If only a *greater* money income yields the same real income (disregarding the change of actual income), the price level has risen, and money debts must be increased in the same proportion in order to represent the same purchasing power. If a *smaller* money income yields the same real income (whatever the change of the actual income may be), the price level has fallen, and money debts should be lowered in the same ratio. The difficulty which arises from the fact that we have only individual price levels,⁷ which may differ very widely, we avoid again by the not unrealistic assumption that the individual price levels are varying close together.

If, on the other hand, we adopt the labor standard, a wage index may be employed, indicating the purchasing

7. In our present case this difficulty is much more important than in the former one, for a debt or a payment always involves two persons, while in the case of comparison of real incomes there is theoretically no hindrance to a separate calculation for each person.

power of money over labor (taken as representative of all factors of production). The construction of such an index is, of course, a thorny problem, full of intricacies, which it is needless to discuss here in detail.

Mr. Snyder's general index, however, is correlated neither to the commodity nor to the labor standard. It is somehow a mixture between them. If it were used as a standard of deferred payments, debts would probably rise in their purchasing power over consumable goods. (We are assuming an advancing society; in a declining society a quite analogous problem would arise.) The index, however, is so broad and contains so many items, that a clear insight into its working is hardly attainable; and therefore it cannot be regarded alone as a good standard of deferred payments. I would repeat that — if I understand correctly — there is no proposal to use it for that purpose.

V

Against the foregoing reasoning it may be objected that it considers only the sphere of consumption. If my memory serves me, it was Foxwell who said, "the consumer is not every one"; but it may be answered that every one is a consumer. What is the exact meaning of the statement that the sphere of production must be considered, and that wholesale prices, prices of raw materials and of capital goods, must be included in a proper index? The quite simple idea is here expressed that the economic situation of a country is not adequately characterized by the movement of the cost of living. The state of business and the degree of employment are governed not only by the variation of prices of consumables, but at least to the same extent by prices of producers' goods, of raw material, machinery, and labor. It is undeniable that business ac-

tivity in each several branch depends primarily on a few prices — on the relation of the prices of its raw material, its machinery, equipment, and labor on the one hand, and the prices of its products on the other. This has, however, obviously nothing to do with a general price index, for in an index exactly those features of the behavior of prices disappear which are relevant for our present problem. The relative position and change of different groups of prices are not revealed, but are hidden and submerged in a general index. And naturally no adjustment of industrial debts and no monetary policy—guided by any price index of producers' goods you like — can avoid those disturbances in business which are caused by the fact that prices change their relative position and do not move harmoniously. Monetary policy can stabilize the price level, but not the relative position of the individual prices.

Something else then must be meant, if it is said that a price index should take account of the sphere of production and include also prices of producers' goods. The only reasonable meaning of the assertion seems to be that for those general disturbances which affect the whole of business life and cannot be attributed to particular price changes, we must attend not only to prices of consumables but also to prices of producers' goods and raw material, wages, real estate, and security prices. In the description and forecast of business cycles and economic crises not only a price index of consumables, but in the same or even greater amount a price index of producers' goods, has to play a rôle. With this problem we have now to deal, first generally, and then as regards the significance of such a broad price index as that of Mr. Snyder.

VI

It is said that, as an indicator of the rhythm of business cycles, retail prices of consumables are not sensitive enough. They vary slowly, and custom and friction delay their motion and limit the amplitude of their movement. Wholesale prices are much more responsive to changes in the sphere of production; their movement precedes the movement of retail prices, and if you observe their variation, you may anticipate and prevent the movement of the retail prices. But why confine ourselves to prices? Are there not other symptoms, such as discount rates, gold movement, volume of credit, figures of production, car-loadings, and the like? Quite so! But this brings us into quite another field of reasoning. We speak no longer about the measure of the price level, but about the fact that certain economic events — prices and price combinations as well as others — are *symptomatic* of other economic events, and particularly of the ups and downs of business activity. The concept of the price level has entirely altered its logical structure and its function. As regards the problems previously considered, the price level was a fact, important as such, since certain events were closely connected — connected by definition — with its variation. If the price level changes, money debts change *uno actu* in their purchasing power, and money incomes bring different real incomes. The consequences vary (inversely) in proportion to the change of the price level; they vanish at once, and *ipso facto*, if the former level of prices is restored. Now, however, the price level is only one symptom among others. The ups and downs of business cycles are connected — but only empirically connected — with the ups and downs of the price level. The connection is far from being so strong, and excep-

tions may occur. It may happen,—and it would be by no means inexplicable—that a period will come when prosperity is correlated with a downward movement of the price level and depression with an upward movement. Any single price and any price combination, prices of consumables as well as prices of capital goods, perhaps prices of real estate, securities and labor too, may serve as symptom, according to the theory of the business cycle adopted and according to the particular circumstances of the time; for the explanation of the business cycle cannot be independent of the economic structure and organization of the country or period under consideration.

True, there is no theory of business cycles which does not attribute a prominent position in the explanation of the cycle to variations of prices. But we can observe a very interesting and remarkable change in the rôle of the price level. The older theories run more or less in terms of prices. Prosperity was characterized by an ascending level of prices, depression by a descending one.⁸ At the climax of the movement, where it changes its direction, stands the crisis. But as statistical methods were refined and insight into the essence of the cycle became deeper, the general price index was replaced more and more, and special single prices and price combinations came in use. In the modern theory of business cycles and business forecasting, of which the methods of the Harvard Economic Service have become representative, the general price level has ceased to play an important rôle. Not the movement of the general price level, but the chronological succession of special price and price combinations, as well as other symptoms

8. Cf. the admirable survey: "The Rôle of Prices in the Business Cycle," by J. H. Williams, *Review of Economic Statistics*, prel. vol. i (1919), pp. 206-210.

(time series), are regarded as significant for the waves of business life. Not by one curve showing the movement of the general price level, but by a system of curves which culminate at different moments, and by their interrelation, the ups and downs of business are adequately described.

We reach again a negative conclusion. In the modern theory of business cycles there is no room and no use for a general index of prices which contains so many different items as that of Mr. Snyder. Such a general index rather conceals and submerges than reveals and explains those price movements which characterize and signify the movement of the cycle.

VII

The result of this inquiry is, so far, negative. The broad price index which we are examining is not applicable to the comparison of real income; it does not establish a fair standard of deferred payment; it is useless in the explanation of the business cycle, and therefore monetary policy would be ill conducted and would perform none of its tasks if it were guided by the endeavor to stabilize such a broad price index.

But its purpose seems to be another one, not practical, but quite theoretical and scientific. Judging from Mr. Snyder's suggestive article "New Measures in the Equation of Exchange,"⁹ it seems that his general price index is destined to the statistical verification of the equation of exchange. The well-known form of this equation is: $\Sigma pq = MV = PT$.

The theoretical value of the equation of exchange seems to me very small. In its strict form, as we find it

9. American Economic Review, vol. xiv, no. 4 (Dec., 1924), pp. 699-713. The price index to which he refers there is only an incomplete and imperfect predecessor of the new one.

in Irving Fisher's *The Purchasing Power of Money*, it is a mere tautology, an identity or definition, not the description of an empirical interrelation of distinct quantities. What I mean is this. If we have a set of economic quantities, we may arrange them in groups in two different ways. First we form the groups from the point of view *A* and then from the point of view *B*. Each set of groups contains all the primary quantities, and if we sum up each set of groups, we get necessarily the same sum which we should have got if we had added the primary quantities. That is precisely the procedure by which we get the equation $\Sigma pq = MV$. The right side and left side of this equation are by definition only different arrangements of the same underlying real facts, a certain number of payments.¹ If we replace now Σpq by the product PT , whereby the proviso is made that *P* and *T* must be constructed in such a way that they fulfill the factor reversal test, that is, that their product is equal to Σpq , the second part of the equation $MV = PT$ becomes also an arithmetical identity.

The so-called equation of exchange, in other words, is a sheer tautology, of little economic significance; it rests on the arithmetic axiom that the result of a summation is independent of the order in which you take the separate terms which form the sum. The equation of exchange needs no more statistical verification than the proposition that $(a + b) + (c + d)$ is equal to $(b + c) + (a + d)$.

Nevertheless, it would be wrong to conclude that Mr. Snyder's calculations are quite useless. On the con-

1. The exact proof of this statement is very easy. I have given it in respect to Schumpeter's particular variation of the equation of exchange (see his splendid article: "Das Sozialprodukt und die Rechenpfennige," in *Archiv für Sozialwissenschaft und Sozialpolitik*, xlv (1917-18), 627), in a paper entitled: "Kritische Bemerkungen zu Schumpeters Geldtheorie" (*Zeitschrift für Volkswirtschaft und Sozialpolitik* N. F. vol. iii, Wien, 1924.)

trary, discoveries of highly interesting facts may be expected from continuance of his studies. The way that leads to fruitful discoveries had already been taken by Mr. Snyder in his above-mentioned article in the *American Economic Review*. It leads in the following direction. The money side of our equation MV is a composite of various factors: the quantity of the different sorts of money and their respective rapidity of circulation on the one hand, and on the other hand the amount of bank clearings or, as it is now usual to say, bank debits and their rate of turnover. It is evident that it would be extremely important to get a clear, quantitative insight into the mutual relations of these factors, in their cyclical movement and secular trend. A direct measurement of all of them is, however, impossible, as Mr. Snyder points out. But it may be possible to get some knowledge indirectly by a round-about computation; and in this endeavor Mr. Snyder's broad index may be an indispensable tool. If we could get a good measure of the whole circulation — as MV is sometimes called — by multiplying such a broad price index by a similar quantity index; and if we know, for example, the quantity of money, the amount of bank debits and their turnover, we may readily compute the rapidity of circulation of money.

But it is premature to go into details, as Mr. Snyder has not yet finished and published his results. The present paper merely calls attention to the limits in the use of such a broad price index, and attempts to show where the true usefulness of this concept is to be found.

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THE ADVANTAGES OF LABOR TURNOVER AN ILLUSTRATIVE CASE

SUMMARY

The Philadelphia tapestry manufacture, 450. — The mills classed in Groups A, B, C, 452. — Hourly and weekly earnings at different mills compared, 453. — Entrances to Class A mills, 455. — Entrances to Class B mills, 459. — Entrances to Class C mills, 461. — Conclusion, 463.

SINCE January, 1926, the weavers of the Upholstery Weavers' Local Union, Number 25, of Philadelphia and vicinity, have reported weekly data covering earnings, and working time of individuals in each of 25 mills. The main findings of these records will be published elsewhere. This is a study of the flexibility of the labor supply in a highly localized industry. It is confined to the experience of workers under the varying attractions of different plants.

The 25 mills for which the records are available include all tapestry manufacture of importance in Philadelphia, and were producing 94 per cent of the total output of the United States in 1920. The industry is a moderate scale one, operating under the conditions which prevailed, according to Veblen, when "the earlier generation of economists worked out their theory of the business man's part in industry."¹ The typical establishment in the manufacture of upholstery goods is small in size. More than one half of the 25 mills considered in this report operate less than 100 looms each. Only five own as many as 200 looms, and only one has reached the 500-loom class. The labor conditions, further, are such that the representative mill tends to

1. Veblen, *Theory of Business Enterprise* (New York, 1923), p. 23.

remain of moderate size. Normally the tapestry weaver secures his first experience in shaft weaving in other branches of the textile industry. Tho in skill the tapestry weavers rank at the top of textile weavers, the industry does little formal training for itself. While this condition would seem to warrant operation of large-scale units, the traditions of the industry make for little economy from added machinery.²

The industry is carried on under conditions of full competition. Plants compete with each other to the point of accepting orders for short lengths and special patterns. The furniture coverings, also, are in competition with substitutes such as leather, velours, and plushes; the draperies and hangings, with silk and even lace fabrics. It should also be remarked that the industry is much affected by furniture exhibits and by style changes in furniture coverings, with attendant slack periods in the early spring and summer months. Identical goods cannot be sold in large quantities nor can patterns be made for stock.

Probably it is not an accident that this industry has been built up in a varied textile centre. The existence of a considerable group of plants in the same city gives a flexible supply of labor accustomed to take advantage of special periods of activity in any part of the industry. Here is an illustration of external economies from the localization of an industry. As Marshall remarks, "Many of those economies in the use of specialized skill and machinery which are commonly regarded as within the reach of very large establishments, do not depend on the size of individual factories. Some depend on the aggregate volume of production of the kind in the neighborhood." And again, "Employers are apt to resort to

2. The weaver operates but one loom. It is also traditional for the loom-fixer to tend 30 looms, new or old. If he fails to keep the 30 looms in repair, the weaver waits or helps him fix up the break.

any place where they are likely to find a good choice of workers with the special skill which they require; while men seeking employment naturally go to places where there are many employers who need such skill as theirs."³

We may now turn to a discussion of the men's earnings. On the basis of the median hourly earnings of all weavers reported at each mill, the 25 plants may be divided into three groups. In these hourly earnings a surprising variation is found between the averages of the various mills. The three groups are: (1) The nine mills with the highest median earnings, referred to throughout this study as "Class A Mills." The medians range from 92 cents per hour in the lowest of this group to \$1.014 in the highest. (2) The second group comprises nine mills with median hourly earnings closely grouped about the average for the industry. These, with median earnings of 86.5 to 90.8 cents per hour, are referred to as "Class B Mills." (3) The "Class C Mills," seven in all, are the plants with the lowest hourly earnings in the industry. The median for the lowest plant is 79.6 cents per hour. The highest in this group has a median of 85.3 cents.

Each of the three groups contains both large and small plants, and each has some plants of all grades of manufacture in the industry. The classification is made merely for convenience in discussion. The median earnings in fact show a gradual decrease from the highest to the lowest plant, with no marked gap between the various plants.

The struggle to maintain tapestry weaving as an art has been a factor in continuing in the industry a rule of one man, one loom. The rule applies to all fabrics, whether damasks, light curtains, upholstery goods, brocatelles, pictorial tapestries, or extreme novelties are

3. Cf. Marshall, *Principles of Economics*, pp. 265, 271.

woven. The analysis of earnings is simplified by the existence of the rule, and by payment of all work on a yardage basis upon an agreed wage scale. While there are many varieties of fabrics woven in different mills, the price per yard is identical from mill to mill for the same fabric.

The method of collecting earnings provides a continuous record for a workman even when he shifts from shop to shop. With the degree of localization in the industry, most of the labor turnover necessarily takes place within the compact group of plants.

Two salient reasons for labor turnover among upholstery weavers are to be distinguished. In the first place, the industry is seasonal. In 1926 all firms were more or less inactive in June and July. In some mills this inactivity lasted many months, tho some maintained greater regularity than others. For instance, firm 5 had average operation (44 hours and over per week) in every month but July; firm 21 had average operation in every month but April. The fluctuations in working time must be recognized as a factor in causing inter-plant movement. Still more important is the second cause of turnover: the fact that earnings differ enough from plant to plant to suggest the possibility of gain by leaving one plant for work in another.

In evaluating the advantages of changing from mill to mill, two points of view are maintained in this analysis. First, employees who left the mill at which they were employed in the beginning of the year and went to one or more other mills. Second, employees who entered a mill at which they were not employed at the beginning of the year. Again, from the point of view of any one mill, a separate study has been made of the earnings and working time of weavers who left during the year to go to other mills and, second, of those who left other

mills to enter this mill. Obviously, when the whole industry is studied, the entrances of one plant are the separations of another.

The inquiry centers about the comparison of hourly and weekly earnings and working time of the same employees at two or more mills. The existence of different levels of earnings, it is true, complicates the analysis. A weaver could leave one of the low-wage mills and increase his hourly rate without attaining the average of the shop he entered, or he might increase his hours without increasing his rate, and yet gain in weekly earnings. On the other hand, a weaver might leave a high-rate mill in a slack period, trusting to more regular operation at an active mill to offset the disadvantage of lower hourly earnings.

In basing the analysis of the effect of the movement from shop to shop upon the gain or loss in earnings and working time, there is no implication that the many personal factors influencing labor changes are not at work. But quantitatively the hours and earnings are the easiest factors to isolate. In considering these causes, the high, average, and low hourly rate mills will be separated; and, within each of the three groups of mills the employees who entered and those who left each class of mill will be considered. All data are for the year 1926.

In 1926 by far the largest number of entrances were into the nine high-wage mills, tho these plants had only 28.7 per cent of the total in the industry. The figures are as follows:

	Class A	Class B	Class C
Number who entered	156	93	95
Number who left	88	101	155

I

ENTRANCES TO CLASS A MILLS

The following table gives in detail the analysis of Class A mills. From other Class A mills 25 per cent entered; 34 per cent were from Class B mills; and 41 per cent from C mills. The effect of turnover differs according to the ranking of the mill left. This is shown in the percentage who gained by entering A mills.

NUMBER AND PERCENTAGE OF ENTRANCES INTO CLASS A MILLS

	From other Class A mills		From Class B mills		From Class C mills	
	No. of Men	Per cent	No. of Men	Per cent	No. of Men	Per cent
Who increased their average hourly rate	22	56.4	41	77.4	51	79.7
Who increased their average weekly hours	28	71.8	25	47.2	34	53.1
Who increased their average weekly earnings	26	66.7	34	64.2	48	75

The weavers who entered from other Class A mills profited most by increased working time; those from B and C mills profited most by increasing their rates. In fact, more men from the B mills lowered than increased their working time; but because 77 per cent increased their rates, the net effect was that 64 per cent received higher weekly earnings by leaving the Class B mills. The separations from Class C mills made the greatest gain in hourly rates, followed closely by weekly earnings. Nearly 80 per cent gained in rates and 75 per cent gained in earnings, while slightly over one half increased their working time. Can one conclude that those who entered from other Class A mills were influenced by the opportunity to work more steadily, and that the major factor for Class B and C mills was the

possibility of higher rates? This in any case was the result, whether expected or not.

That wage rates must have been an extremely important factor is evidenced by the fact that 144 weavers left mills of a lower average hourly rate than the one they entered, and only 12 changed from mills of a higher average rate than the one they entered.

The next problem concerns the standing of the men who changed. Were the separations among men earning rates above or below the average of the mill they left? The Class A mills were losing from the upper half of their personnel. Sixty-four per cent of those who shifted to other Class A mills were at or above the average of the mills they left. In the case of the B mills, 34 per cent were above the average of the mills they left. The separations from C mills were about evenly divided between employees above and below the average. In other words, the separations from A mills were preponderantly from among the best employees, the C mills evenly distributed, and the B mills from the lower half of the wage scale. This movement is given below in tabular form.

WAGE RANKING AT OWN MILL OF THOSE WHO ENTERED CLASS A
MILLS

	From other Class A mills	From Class B mills	From Class C mills
No. who entered	39	53	64
No. at or above average rate of mill left	25	18	31
Per cent at or above average rate of mill left	64.1	34	48.4
No. below average rate of mill left	14	35	33
Per cent below average rate of mill left	35.9	66	51.6

Was there any difference in the experience of the men above and below the average? Decidedly yes: 72 per cent of the men above the average and only 50 per cent below the average of the A mills attained the average of the mill they entered. From the B mills, 38.9

per cent above and 31.4 below the average attained the average of the mill entered. Considering the experience of the weavers from C mills, it is puzzling to find that 54.8 per cent of the men above the average of the C mills attained the average of the mill they entered, tho they came from mills of markedly lower rates. The men below the average of C mills did not in any large number attain the average of the shop they entered.

It would seem to be fair to conclude that the weavers above the average in the C mills were having their earning power reduced by some factor connected with the C mills. Their ability to change to the highest rate mills and produce enough to earn the average rates of those mills seems to eliminate the possibility of arguing incompetence on the part of these men.

The summary upon which these conclusions rest is more concrete in tabular form.

RATES OF EMPLOYEES ENTERING A MILLS ABOVE AND BELOW THE
AVERAGE OF THE MILL THEY LEFT

	Weavers above average of mill left			Weavers below average of mill left		
	From A	From B	From C	From A	From B	From C
No. of men	25	18	31	14	35	33
No who increased hourly rate	10	8	18	12	33	33
No. who attained average of mill entered	18	7	17	7	11	5
Per cent who attained average of mill entered	72.0	38.9	54.8	50	31.4	15.2

In all these comparisons, the existing differences in hourly earnings at the various mills are a complicating factor. Those above the average of the C mills may be earning even less than weavers below the average of A mills. It seemed well, before concluding the discussion of entrances in high-rate mills, to make a comparison

from the average of hourly rates in the industry instead of the individual mill. In all mills the average hourly rate was about 90 cents in 1926.

While the use of the average hourly earnings of the industry gives a stable base from which to compare earnings, it must be remembered that employees from A mills make up most of the group at or above 90 cents.

ENTRANCES INTO CLASS A MILLS EARNING ABOVE AND BELOW
NINETY CENTS PER HOUR AT THE MILL THEY LEFT

	At or above 90 cents per hour		Below 90 cents per hour	
	Number	Per cent	Number	Per cent
Total no. of men	65		91	
No. who increased av. hourly rate	30	46.2	84	92.3
No. who increased av. weekly hours	38	58.5	49	53.8
No. who increased av. weekly earnings	35	53.8	73	80.2

The advantage in changing, judged on this basis, corresponds therefore with the conclusion already drawn, namely, that the employees earning a high rate at the plant they left gained mainly in increased hours, while the employees at the lower rates gained mainly by raising the level of their hourly rates.

The effect of securing employment in the A mills was on the whole a net gain to employees through either increased hours or increased earnings. By the changes, 69.2 per cent of the A entrances made weekly earnings above what they were getting at the plant they left.

It is necessary now to discover the experience of the men who went to B mills.

II

ENTRANCES TO CLASS B MILLS

Based upon number of men rather than exact amount of earnings, the weavers who left A mills to work in B mills made on the whole no gain in weekly earnings; for exactly one half increased and one half decreased. They

got somewhat steadier time in the B mills, but not sufficient to offset the fact that 71 per cent lowered their hourly rates by changing. The men from other B mills gained somewhat in rates but lost in working time, and on the whole had only a slight advantage as regards the proportion with higher weekly earnings. The men from C mills gained both in rates and working time. Despite the losses of men from A mills, who were a small proportion of the total, the tremendous gain to men from C mills leaves the total entrances to B mills with 62 per cent who increased weekly earnings.

NUMBER AND PERCENTAGE OF ENTRANCES INTO CLASS B MILLS

	From Class A Mills		From other Class B Mills		From Class C Mills	
	No. of Men	Per cent	No. of Men	Per cent	No. of Men	Per cent
Who increased their average hourly rate	8	28.6	8	53.3	32	64
Who increased their average weekly hours	18	64.3	7	46.7	31	62
Who increased their average weekly earnings	14	50.0	8	53.3	36	70

The total entrances into these mills included but 93 men; 39 from mills of higher hourly rates than the mill shifted to, and 54 from those with lower rates. From the higher rate mills 38 per cent increased their hourly compensation; from the low rate, 61 per cent.

WAGE RANKING AT OWN MILL OF THOSE WHO ENTERED CLASS B MILLS

	From Class A Mills	From other Class B Mills	From Class C Mills
No. who entered	28	15	50
No. at or above average rate of mill left	15	7	30
Per cent at or above av. rate of mill left	53.6	46.7	60
No. below average rate of mill left	13	8	20
Per cent below average rate of mill left	46.4	53.3	40

In the incidence of turnover there is not a great difference in the relative standing of men who left to enter B mills from that of those who left to enter A mills.

Again the A mills lost from the upper half of their wage group; the B mills from the lower half; and the C mills, which had lost equally from both groups to A mills, in this case lost predominantly from those above their average.

Proportionately, the men above the average of the mill they left made a better showing than those below the average, as appears from the following:

RATES OF EMPLOYEES ENTERING B MILLS ABOVE AND BELOW THE
AVERAGE OF THE MILL THEY LEFT

	Weavers above average of mill left			Weavers below average of mill left		
	From A	From B	From C	From A	From B	From C
Number of men	15	7	30	13	8	20
No. who increased hourly rate	1	2	16	7	6	16
No. who attained av. of mill entered	11	6	18	6	4	3
Per cent who attained av. of mill entered	73.3	85.7	60	46.2	50	15

From the A mills 73 per cent above the average and 46 per cent below the average attained the median rate of the shop they entered, almost the same ratios as pertained in the case of changes to A mills. From B mills the showing was somewhat better. It would seem easier for men from C mills to make the average of these middle rank mills than to make that of the A mills, but the proportion who attained the average of the shop entered is only slightly higher than in the case of A mills; remembering, of course, that the goal was lower.

ENTRANCES INTO CLASS B MILLS EARNING ABOVE AND BELOW
NINETY CENTS PER HOUR AT THE MILL THEY LEFT

	At or above 90 cents per hour		Below 90 cents per hour	
	Number	Per cent	Number	Per cent
Total number of men	42		51	
No. who increased av. hourly rate	12	28.6	36	70.6
No. who increased av. weekly hours	24	57.1	32	62.8
No. who increased av. weekly earnings	20	47.6	38	74.5

III

ENTRANCES TO CLASS C MILLS

The movement into the seven low wage mills was not as advantageous as that into A and B mills. Fifty-two and six tenths per cent of the entrances into this group decreased their weekly earnings. The only gain was to those who came from other C mills. This is not surprising since 68 of the 95 entrances came from higher rate mills than the one they entered and two thirds of these lowered their rates by changing.

NUMBER AND PERCENTAGE OF ENTRANCES INTO CLASS C MILLS

	From Class A Mills		From Class B Mills		From other Class C Mills	
	No. of men	Per cent	No. of men	Per cent	No. of men	Per cent
Who increased their average hourly rates	4	19.0	10	30.3	21	51.2
Who increased their average weekly hours	11	52.4	20	60.6	27	65.9
Who increased their average weekly earnings	10	47.6	13	39.4	22	53.7

It has been shown that in the case of entrances into A and B mills, the A mills were losing from the employees earning above the average. This is reversed in the case of C mills. Fifty-seven per cent of the employees going to low wage mills were from the lower half of the earnings group in the Class A shops they left. The difference in ratio above and below in the case of B and C mills is not great, tho on the whole predominantly from those below the average of the shop left.

The experience of men above and below the average of the shop left corresponds in the main with that of previous groups. More above than below the average in earned rates at the shop left made as high or higher rates than normal at the shop they entered.

WAGE RANKING AT OWN MILL OF THOSE WHO ENTERED CLASS C
MILLS

	From Class A Mills	From Class B Mills	From other Class C Mills
No. who entered	21	33	41
No. at or above average rate of mill left	9	15	20
Per cent at or above average rate of mill left	42.9	45.5	48.8
No. below average rate of mill left	12	18	21
Per cent below average rate of mill left	57.1	54.5	51.2

Comparing from a stable base of 90 cents, it is evident that those at or above 90 cents increased their hours only and lost on the whole by lower hourly rates and lowered

RATES OF EMPLOYEES ENTERING C MILLS ABOVE AND BELOW
THE AVERAGE OF THE MILL THEY LEFT

	Weavers Above Av- erage of Mill left			Weavers Below Av- erage of Mill left		
	From A	From B	From C	From A	From B	From C
No. of men	9	15	20	12	18	21
No. who increased hourly rate	0	3	7	4	7	14
No. who attained aver- age of mill entered	5	8	12	4	7	9
Per cent who attained average of mill entered	55.6	53.3	60.0	33.3	38.9	42.9

weekly earnings. The group below 90 cents about balanced losses and gains since 51.6 per cent had higher weekly earnings than before they changed.

ENTRANCES INTO CLASS C MILLS EARNING ABOVE AND BELOW
90 CENTS PER HOUR AT THE MILL THEY LEFT

	Weavers at or above 90 cents per hour		Below 90 cents per hour	
	Number	Per cent	Number	Per cent
Total no. of men	33		62	
No. who increased average hourly rates	6	18.2	29	46.8
No. who increased average weekly hours	21	63.6	37	59.7
No. who increased average weekly earnings	13	39.4	32	51.6

We may now summarize the net advantages of inter-mill changes. It appears that 67 per cent of all entrants to A and B mills were able to increase their weekly earnings, either by earning higher hourly rates or by working steadier time. There was enough loss in weekly earnings to those who went to C mills to reduce the effect upon the whole industry to a gain in weekly earnings for only 61 per cent of all who changed. Of the 344 records analyzed, 201 had some increase in hours and 198 an increase in both hourly rates and weekly earnings.

The record being for one year only, no attempt is made to state the amount of increase; nor is any account taken of the time lost in changing from one mill to another. The loss in changing cannot be great, as weavers frequently report earnings in two mills in the same week. Besides, the sharing of work in slack periods means that the weaver will retain his position in one mill until he has arranged to start work in another.

Throughout the analysis the study has been from the point of view of advantage to the workmen. Obviously, it could not be beneficial to the Class A and Class C mills to lose from the upper half of their producing groups. The Class A mills were paying for irregular operation. The differentials in hourly rates between mills were great enough to cause a movement out of the C mills.

The changes from plant to plant have advantages other than gain in immediate earnings, which cannot be stated in quantitative terms. There are few cases in this industry of the extreme specialization associated with large-scale operation. Most plants weave a variety of fabrics; and further, the worker who has experience in a number of shops comes to be familiar with a still wider range. Both the employer and the workman gain from the informal passing of technical knowledge from

shop to shop. Only in this way is trade lore passed from mill to mill.

The problems of labor turnover of most interest to the economist are the flexibility in the labor supply and the conditions under which changes take place from a lower grade to a higher grade occupation, or vice versa. To study the vertical movement, the problem which the economist regards as mobility of labor, involves recording the steps employees follow in upgrading themselves. For this purpose one is dependent upon data for identical persons and trades over a long period.

This study, however, is an attempt to trace the horizontal movement of labor beyond the mere matter of changes in the personnel of an individual plant. The findings show that there was some net gain in earnings from inter-plant changes. Further there is indicated a considerable knowledge on the part of workmen of conditions and working opportunity in the trade. How far this knowledge is due to the specialized skill of the occupation, the organization of the craft, or the moderate size of the industry, is uncertain.

One of the most interesting questions raised by the study is concerned with the existence of different levels of earnings at the various plants. The case is one in which a standard piece-work scale has been adopted in a group of going concerns without any attempt or possibility of standardizing the equipment or conditions under which the scale operates. The economist will ask whether the result has been to make for inequality rather than equality. If there is basic inequality, may not the inter-plant movement be part of the process of distributing the ability of the working force to the most favored plants?

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THE GROWTH OF ENGLISH SHIPPING 1572-1922

SUMMARY

Nature of the data, — Tonnage of the merchant fleet, Table I, 466. — Shipping cleared in foreign trade, Table II, 469. — Entrances at London, Table III, 470. — Synoptic graph, 473. — Size of vessels, Tables IV and V, 475, 476. — Conclusion, 478.

IN this Journal for August, 1927, Professor L. R. Miller gave details of the shipping of London in 1601-02, on the basis of newly discovered evidence. This cross-section of the shipping trade as it stood at the beginning of the seventeenth century I will endeavor to supplement by a survey of its growth during the entire period from that time to the present.

Considerable material about the tonnage of shipping is accessible for the more important countries of Europe from the fifteenth century. One of the longest series is that for England, which reaches back to the early years of Elizabeth. From the close of Elizabeth's reign, we have a figure for the shipping at the port of London, and from the period of the Restoration we have adequate and continuous series for shipping cleared from England in foreign trade, the tonnage of the merchant fleet, and the shipping entered at London.

Unfortunately the English material, tho abundant in respect of statistical data, presents serious difficulties in the interpretation of the tonnage ratings. The methods of measuring tonnage have changed. The modern unit, adopted in 1854, is wholly different from any used before. The older data, further, are based on declarations by the owner or captain, and are subject to correction

on various grounds, more especially because vessels were rated higher when leased to governments for naval use. In the tables, errors are assumed to have occurred without bias over the whole period, except for some adjustments confined to the years 1786-1854.¹ After 1854, in addition to an obvious conversion to the earlier unit, some adjustment must be made to cover the increased effectiveness of steam vessels; higher average speeds made possible a larger number of trips, so that the tonnage of entrances and clearances would increase more than in proportion to the increase in the tonnage of the fleet. Steam tonnage has been multiplied by the usual coefficient — four — in the table giving the statistics of the merchant fleet.

The first and longest of the series of figures (Table I) gives a record of the tonnage of the merchant fleet. Until 1755, no figures are available except for England itself. After that date figures for other divisions of the British dominions become available at various dates; but continuous figures for what we now call the United Kingdom are not available until 1787. The series of English figures has been continued to 1799, so that there is considerable overlap. The first group of figures for England is made up from several sources. We have two figures from the reign of Elizabeth that are surveys of the fleet made for the use of the admiralty. The first of them, for the year 1572, was prepared by the surveyor of the port of London, apparently from customs rec-

1. For a consideration of these details, the reader is referred to the following books: W. H. White, *A Manual of Naval Architecture*, 2d ed., London, 1882; Walther Vogel, *Die Grundlagen der Schifffahrtstatistik*, Berlin, 1911; the Report of the Royal Commission on the Measurement of Tonnage, 1881; Commons Papers, 1881, vol. xlix; M. Oppenheim, "The Royal and Merchant Navy under Elizabeth," *English Historical Review* (1891) vi, 465-494; A. Van Driel, *Tonnage measurement: an Historical and Critical Essay*; The Hague, 1925.

TABLE I

THE NUMBER OF VESSELS AND THE TONNAGE OF THE MERCHANT FLEET
ENGLAND, 1572-1799; UNITED KINGDOM AND POSSESSIONS IN EUROPE,
1788-1920

	Number of Vessels	Official Tonnage	Tonnage of British ships in foreign trade (including repeated voyages)
1572	1,383	50,816	
1581			72,450
1582	1,642	66,827	
Av. 1663-69		[89,000]	95,266
1688		[178,000]	190,533
1701	3,281	261,222	273,693
1750			609,798
1755	7,215	473,328	
1760	6,105	433,922	
1765	7,076	542,566	
1770	7,898	593,962	
1774			798,864
1775	7,544	605,974	
1780	6,780	534,512	
1785	7,926	751,626	
1790	10,053	1,134,531	
1795	10,827	1,207,898	
1799	11,487	1,337,181	
		Approximate Carrying power, adjusted for steam: Register tons $\times 4$	Approximate deadweight capability
1788	12,461	1,279,062	
1799	14,883	1,551,072	1,735,000
1803	18,068	1,986,076	
1810	20,253	2,210,661	
1815	21,869	2,447,831	2,830,000
1820	21,969	2,439,029	
1825	20,701	2,328,807	2,860,000
1830 ¹	19,174	2,201,592	2,860,000
1835	20,300	2,360,303	
1840	20,685	2,584,408	3,340,000
1850	25,984	3,651,133	4,068,000
1860 ²	27,663	4,658,687	6,020,000
1870	26,367	5,690,789	9,025,000
1880	25,185	6,574,513	14,743,000
1890	21,591	7,978,538	23,104,000
1900	19,982	9,304,108	30,924,000
1910	21,090	11,555,663	42,880,000
1920	18,696	11,361,084	43,692,000
			60,000,000

1. Loss of about 7 per cent in recorded tonnage by the exclusion of lost vessels formerly carried on the register. Commons Papers, 1835, vol. xlix, p. 71. Ratio is computed.

2. Gain of about 7.5 per cent in recorded tonnage through change in rules of measurement effective 1857. Commons Papers, 1874, vol. x. App. 4, p. 228.

3. These ratios are based upon the official statements in regard to the effect of changes in the tonnage rules. They summarize the conclusions of the text.

ords.² The second, for the year 1582, seems to be a survey carried out by officials of the Admiralty involving an actual visitation of all the ports.³ The totals are appreciably larger than those given for 1572, and one would suppose that some of the difference is due to omissions in the earlier list. A list of a similar character exists for the year 1628, but no data from that list are available in print. George Chalmers and Lord Sheffield give a series of figures for British ships in foreign trade covering the period 1581 to 1774.⁴ These figures evidently come from custom house records and become later a part of the series of entrances and clearances in foreign trade. They bear a very close relation to the tonnage of the British merchant fleet, and there is reason to suppose that the customs figures for the fleet as given for the latter half of the eighteenth century, are really based on just such materials. The customs officers assumed that, if they excluded repeated voyages by particular vessels in the given year, they had the tonnage of the British fleet. It has therefore seemed defensible to compute the approximate tonnage of the British mercantile fleet on this basis for the years 1663 and 1688, using the proportions found in 1582 and 1701. From 1755 the figures are reported by the custom house officers in the study of shipping made at the close of the century for the use of the committee on the accommodations for shipping at the Port of London.⁵ It is unfortunate that we have no specific figures between 1701

2. State Papers Domestic, Elizabeth, xxiii; merchant ships in England: 1572. Calendar of State Papers, Elizabeth, vii, 441; complete tabulation of the return.

3. State Papers Domestic, Elizabeth, clvi, no. 45; "The names of all shippes in the realme," 1582.

4. (John Baker Holroyd) Lord Sheffield, *Observations on the Commerce of the American States* (London, 1784), p. 159, note; George Chalmers, *An estimate of the Comparative Strength of Great Britain* (London, 1782), p. 38, and table facing p. 37.

5. Commons Journals, xlvii, 353 (no. 17).

TABLE II
SHIPPING CLEARED IN FOREIGN TRADE. ENGLAND, 1581-1780;
GREAT BRITAIN, 1787-1922

	English Tonnage	Foreign Tonnage	Total Tonnage	Mean tonnage for nearest decade ¹
1581	72,450			
Av. 1663-69	95,266	47,634	142,900	
1688	190,533	95,267	285,800	
1693	118,088	88,502	206,590	
1694	73,056	69,724	142,780	
1696	91,767	83,024	174,788	189,000
1697	144,264	100,524	244,788	
Av. 1699-1701	293,703	43,625	337,328	
1709	243,693	45,625	289,318	
1711	266,047	57,890	323,937	
1712	326,620	29,115	355,725	
1714	444,843	33,950	478,793	
1715	406,392	19,508	425,900	400,000
1716	438,816	17,493	456,309	
1718	427,962	16,809	444,771	
1720				
1723	392,643	27,040	419,683	
Av. 1726-28	432,832	23,651	456,483	
Av. 1736-38	476,941	26,627	501,673	
Av. 1739-41	384,191	87,260	471,451	
1744	373,817	72,849	446,666	512,000
1747	394,571	101,671	496,242	
1748	479,236	75,477	554,713	
Av. 1749-51	609,798	51,386	661,184	
Av. 1755-57	451,254	73,456	524,711	592,000
1760	471,241	112,737	573,978	
1765	651,402	67,855	719,257	
1770	703,495	57,476	760,971	
1775	767,282	64,046	831,328	
1780	619,462	134,515	753,977	
	British Tonnage	Foreign Tonnage	Total Tonnage	Approximate Equivalent in Dead Weight Tons ²
1787	998,637	174,197	1,172,834	
1790	918,379	149,974	1,068,353	
1795	638,103	382,567	1,020,670	
1800	858,849	685,051	1,543,900	1,710,000
1805	951,255	605,639	1,556,894	
1815	1,311,716	671,695	1,983,311	2,300,000
1820	1,472,947	390,991	1,863,938	
1825	1,711,169	851,354	2,562,593	
1830	1,989,060	736,207	2,725,267	3,540,000
1840	2,197,014	878,738	3,085,752	3,900,000
1850	3,960,764	1,946,214	5,906,978	7,650,000
1860	6,358,917	4,424,020	10,782,937	14,800,000
1870	11,934,087	4,779,851	16,713,938	23,000,000
1880	18,867,857	6,817,813	25,685,670	35,200,000
1890	25,267,018	8,590,065	33,857,083	46,500,000
1900	27,906,035	15,765,781	43,671,816	60,000,000
1910	36,240,833	20,953,172	57,194,005	78,900,000
1920	23,532,459 ³	13,193,076	36,725,535	
1922	36,817,495	22,864,635	59,682,130	82,000,000

¹ Plotted on the chart as of the year indicated.

² Adjusted as in Table I.

³ Vessels used by the Government are not included for 1914-20. The increase in register tonnage after 1914 is partly ascribable to the fact that steam vessels were subject to the new rules of 1907.

and 1755. Inferences as to the development of British shipping in that period have been made upon the basis afforded by the other series of statistics. After 1786, materials are abundant.⁶

The returns of shipping cleared in foreign trade (Table II, p. 469) are available for England alone in the period 1663 to 1780.⁷ After that date the returns for Great Britain are continuous, but care must be taken to exclude the shipping in coasting trade, with Ireland, and in ballast. During this period, however, the statistical data become very confusing, because a number of different series are preserved in the records, and many writers have not been careful in distinguishing among them. The most serious sources of difficulty are involved in the treatment of the trade between Great Britain and Ireland and of ships in ballast. Many of the later lists include both ships with cargo and in ballast, which amounts to a very considerable increase in the total.⁸

The series of entries at the port of London (Table III) is based upon a manuscript return for 1601,⁹ and for the later period upon various custom house records

6. The figures for 1795 and 1799 are based upon the data in Macpherson's *Annals of Commerce*, iv, 368-490. Thereafter, the figures in G. R. Porter, *Progress of the Nation* (London, 1912), pp. 512-535, completed to date from the Statistical Abstract. See also J. Marshall, *A Digest of All the Accounts relating to the Population, Production, . . . of Great Britain and Ireland* (London, 1833), ii, 226. These tables present more details, but were less convenient because the totals are for the British Dominion as a whole.

7. G. Chalmers, *op. cit.*, passim, pp. 5-38. The table at p. 37 is less detailed than the text which precedes.

8. The figures in the table for 1787-1830 are from J. Marshall, *op. cit.*, ii, 225, 226. Thereafter, from annual returns in the Commons Papers until the Statistical Abstract becomes available. The series in Porter confuse the clearances with cargoes and in ballast.

9. See the article by Professor Miller, already referred to, in this *Journal* for August, 1927, xli, 740.

TABLE III
FOREIGN AND COASTWISE SHIPPING ENTERED AT THE PORT OF LONDON WITH CARGOES (EXCEPTING ONLY
FIGURES FOR 1830, 1840, 1850 WHICH INCLUDE SOME SHIPS IN BALLAST)

	British & Foreign vessels in Foreign Trade		Approximate dead- weight capability:	Coastwise		Number	Total	
	Number	Tonnage		Number	Tonnage		Number	Tonnage
1601		40,900						
1700								
1702	1,335	157,035		5,562	278,100	6,897	435,135	
1710		110,195						
1719		198,590						
1728 ¹	2,152	(270,000)						
1750								
1751	1,082	234,369		6,396	511,080	8,078	647,079	
1779		359,809						
1790	3,415	581,095		9,278	(927,800)			
1793	3,541	655,124		9,641	(964,100)			
1796	4,176	723,985		10,629	1,323,532			
1798	3,420	627,087	695,000	10,133	1,250,449	13,553	1,877,536	2,080,000
1800-15	Information not available.							
1816	3,119	629,050	730,000					
1820	4,210	777,858	900,000	17,017		24,235	3,388,430	4,050,000
1830	5,178	951,729	1,140,000	19,057	2,436,701	28,387	4,139,929	
1840	6,768	1,289,116	1,540,000	21,619	2,850,813	31,669	5,155,856	
1850	9,914	1,904,948	2,280,000	21,755	3,250,908	29,473	6,111,643	8,410,000
1860	11,108	2,957,082	4,050,000	18,365	3,154,561	23,520	6,881,135	9,50,0000
1870	10,727	4,031,263	5,550,000	12,793	2,849,872			
1880	10,842	5,819,950	8,000,000	35,686	4,258,628 ²	45,528	10,078,578	13,820,000
1890	10,343	7,532,174	10,350,000	36,333	5,075,253	45,676	12,607,427	17,350,000
1900	10,847	9,380,514	12,800,000	12,640	5,543,050	23,487	14,923,564	20,300,000
1910	10,116	11,382,777	15,650,000	13,152	5,927,559	23,268	17,310,336	23,800,000
1920	Not available with vessels in ballast excluded.							
1922	Not available with vessels in ballast excluded.							

¹ Tonnage for 1728 computed in terms of the average for ships of the port of London in 1732.

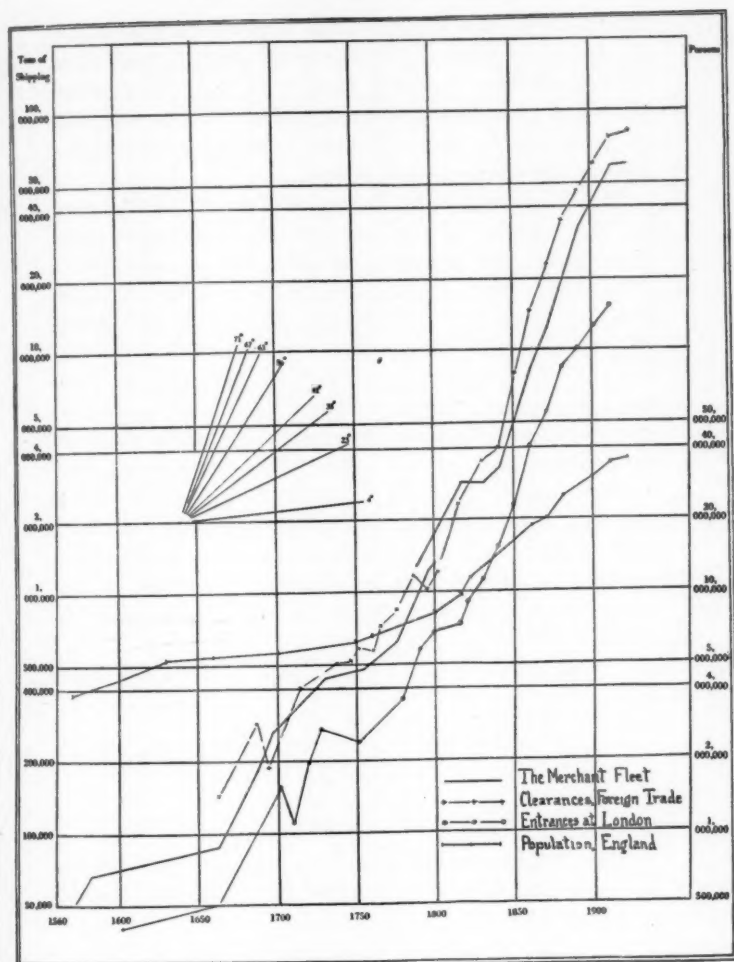
² Coastwise figures prior to 1872 excluded vessels carrying cargoes exempt from coastwise regulation.

that have found their way into print.¹ The coastwise trade was a large feature of the business of the port throughout the period and, consequently, failure to distinguish sharply between these two series can become very confusing indeed. The series are carefully distinguished in the primary printed sources, but some of the writers who have copied the series have been extraordinarily careless in describing the figures presented. The problem of ships in ballast affects the figures for 1830, 1840, and 1850, and there are some serious differences in the basis of the records of the coasting trade after 1872.

The series reveal some striking features. They record a substantial and relatively continuous growth from the period of the Restoration. The correspondence between the three series is as close as could possibly be expected. The rapid growth in the seventeenth century is comparable to the growth of the late nineteenth century, which we have been inclined to think of as unexampled in the centuries preceding.

In plotting upon the graph the figures for the tonnage of the English fleet, an estimate has been made for the year 1750 on the basis of the London figures, together with certain data on the values of imports and exports not reproduced here. There seems to be little ground for doubting the relative stagnation of the years from

1. G. Chalmers, *op. cit.*, p. 5, note; William Maitland, *History of London* (London, 1760), ii, 1262-1263. Report from the Committee appointed to enquire into the best mode of providing sufficient accommodation for the increased trade and shipping of the Port of London, I. First Report, 1796, II. Second Report, 1799. This report is frequently cited as vol. ii of the Parliamentary Papers of 1796. Many of the statistics of the earlier report are repeated with continuations, and some new data are given. The present figures are from vol. i, App. G, and vol. ii, App. D2. The returns have been copied by many contemporary and later treatises. — The figures 1798-1899 are from the Report of the Committee on the Port of London (1902), Appendix, pp. 232-237. Later figures are from the annual returns on shipping, as the Statistical Abstract gives no returns for London, excluding ships in ballast.



1730 to 1750, and it seemed less objectionable to make the inference embodied in the graph than to assume a continuous rate of growth from 1701 to 1750. Similar inferences have been made with reference to the shipping of the port of London, altho the grounds for such an inference are distinctly less secure.

The interpretation of the graph is simple. The curve for the tonnage of the merchant fleet indicates that there were three periods of active growth: 1663-1730, 1770-1811, 1840-1910. The intervals between these periods, while not registering actual decline, were periods of relative stagnation, particularly the later intervals. The clearances in foreign trade disclose two periods of growth: 1663-1760 and 1801-1910. It is important to note that the commercial growth of the late seventeenth century, as shown by both sets of data, was not accompanied by any large increase in population; whereas the increase in population was very considerable in the nineteenth century. The rates of change in population and in shipping shown by degrees of inclination of the trends, drawn by direct measurement, are as follows:

<i>Shipping:</i>	Trend of Increase in Population	Trend of increase	
		Gross	Net
1663-1730.....	4	56	52
1770-1811.....	23	63	40
1840-1910.....	35	71	36
<i>Foreign Trade:</i>			
1663-1760.....	11	42	31
1801-1910.....	38	67	19

The detail of the lists of the merchant fleet affords considerable material in respect to the size of vessels (Tables IV and V), a subject of very great interest.²

2. Table V is based upon the lists cited earlier, excepting only the data for 1732, which have been tabulated from an itemized list given in W. Maitland, *History of London*, 1760, pp. 1259-1262. The name of the ship and the tonnage is given. There is an extraordinary duplication

TABLE IV
CLASSIFICATION OF THE MERCHANT FLEET IN RESPECT TO THE SIZE OF VESSELS
(Figures indicate tonnage, not number of vessels. Tonnage ratings unadjusted.)

	Under 40 tons	40-99 tons	100-419 tons	420-1999 tons	2000-3999 tons	4000 and over tons	Total
England							
1572	16,971	23,035	10,810				50,816
1582	18,346	24,256	23,725	500			66,827
1788	59,061	193,267	709,641	91,443			1,053,910
United Kingdom and Continental Possessions							
1788	103,199	318,376	843,697	91,913			1,362,590
	Under 100 tons						
1788	421,575						
1830	559,772						
			1,359,561	280,616			2,199,959
			100-399 tons	400-1999 tons			
1869	530,125		1,523,784	2,553,898	868,197	67,856 ¹	5,557,303
						13,343 ²	
PERCENTAGE OF VESSELS IN EACH CLASS							
England							
1572	33.0	45.6	21.4				100
1582	27.4	35.4	35.4	1.8			100
1788	5.6	18.4	67.3	8.7			100
United Kingdom							
	Under 100 tons						
1788	31.1		62.1	6.8			100
1830	25.2		62.4	12.4			100
1869	9.6		27.4	45.9	15.6	1.2	100

¹ Largest vessel in class, 2800 tons.

² One vessel only of the tonnage given.

Many writers on the history of commerce in the sixteenth century, have made the obvious error of comparing the wooden vessels of the earlier period with the iron and steel vessels of recent years. The data available show that the changes in the size of vessels were not notable in England until after 1830, even tho the proportion of the larger vessels to the total increased, especially after 1730. If we were to study the shipping of Europe as a whole, the changes in the size of merchant vessels would be less considerable than in the case of England alone. Down to 1850 no merchant vessels are recorded with a registered tonnage in excess of 1200 tons, and there were very few vessels in England in the group from 420 to 1199 tons. There were large numbers of vessels of that rate in the Mediterranean as early as 1500; there were proportionately more in Holland than in England, tho the size of Dutch vessels was probably not as great as that of the larger Mediterranean carriers. Throughout the period the merchant fleets of the different countries included large numbers of very small

TABLE V

SHIPS BELONGING TO THE PORT OF LONDON					
	Under 40 tons	41-99 tons	100-419 tons	420-1199 tons	Total
<i>a. Tonnage</i>					
1582	352	3,665	7,780	500	12,297
1732	2,449	38,021	114,052	22,035	178,557
<i>b. Percentage of tonnage in the various classes</i>					
1582	2.9	30.0	63.0	4.1	100
1732	1.4	21.6	64.5	12.5	100

vessels. There were changes in the proportions between the definitely small and the medium-sized vessels in all the countries; but less change in England than elsewhere: 44 vessels with the name Mary, 19 with the name Anne; 15 with the name Betty; many other names duplicated ten times or more. As the tonnage of these vessels varies considerably, one wonders to what extent vessels have actually been identified when it is alleged that the same vessel is reported at different times, yet with tonnages widely variant.

where, because the conditions in England were especially favorable to the persistence of small units in the carrying trade.

The material available shows that there were two factors affecting the size of vessels — the total volume of trade and the length of the continuous voyage. Of the two, the length of the voyage was the more important. The most striking evidence on this subject is furnished by an account of the number of ships entered and cleared from the port of London in 1798, unfortunately too complex to permit of insertion in the present article. The significant features of the account are easily stated. Of ships of 400 tons and upwards, 112 British ships entered the port; 64 of these were trading to the East Indies, 30 to the West Indies. Of the British vessels under 100 tons, there were 208 entrances, 101 from Ireland. Of foreign vessels of less than 100 tons, 964 entered the port, of which 661 were from Prussia, 153 from Holland, 46 from Denmark and Norway.³

The increase in the size of the merchant vessels in the latter half of the nineteenth century is a subject by itself. Some increase in size would have been possible without a change in materials. Wooden vessels could be built up to 4,000, and possibly 5,000 tons, but with rapidly increasing costs of construction and maintenance. Serious structural difficulties would have been encountered in building very large wooden vessels, because the stems and stern-posts must needs be single timbers, and there are fairly definite limits to the size of first-class timbers for these purposes. The introduction of iron and steel disposed effectively of all these problems. This radical change should be borne in mind in

3. Second Report from the Select Committee upon the Improvement of the Port of London, Commons Papers, 1796; Report on the Port of London, ii (App. D5), pp. 80, 81.

any discussion of the size of vessels in the earlier periods. The revolution in the character of the merchant fleet is a chapter in the history of the late nineteenth century, an outgrowth of the development of the iron ship.

The primary conclusions of this brief statistical study are embodied in the graph. The more striking rates of growth have been pointed out already. The importance of the character of the trends prior to 1660 has not before been sufficiently dwelt on. As they here appear, these trends, while involving some little conjecture, have objective bases in the general figures for shipping cleared in 1660, the clearances from the port of London in 1601, and the figures for the merchant fleet in the early part of the reign of Elizabeth. They show clearly that the general expansion of English commerce dates from the Protectorate or the Restoration, rather than from the Elizabethan period.

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REVIEW

THE LITERATURE OF EMPLOYEE REPRESENTATION

PLANS for winning the coöperation and good will of industrial workers through the medium of representation are known by many names. One of the most common is "Employee Representation." Whether this name or some other be chosen from the dozen or more readily available, the basic idea is the same. That is to say, such terms as "Works Councils," "Shop Committees," and "Industrial Democracy" are applied (with little or no thought of differentiation) to all plans for collective dealing limited to single plants, and functioning through frequent conferences of appointed or elected representatives of management and workers.

The employee-representation movement in America dates from 1917. It is true that the Colorado Fuel and Iron Company, William Filene's Sons Company of Boston, and a few other firms had introduced "coöperative plans" before this date, but *as a movement* employee representation got its real start with the entry of the United States into the World War. Widespread adoption of non-union collective dealing came in response to war-time demands for greater production. Once well launched, the movement gained rapidly in popularity. The 225 plans in operation in 1919 jumped to 725 by 1922, to 814 by 1924; and there are probably a thousand or so plans now functioning. In this age of many books on business subjects, employee representation has not been overlooked. The present paper will give some notion of the ground covered by the most important books in the field.

The National Industrial Conference Board has done much

to arouse interest in employee representation, and to keep the student of industrial relations informed of its developments. For almost a decade this Board has used its extensive powers of investigation in collecting and analyzing data relating to works councils. Beginning in 1919, it has published reports every few years, and promises that yet another volume will appear in 1928. The Board's earliest attention to the subject was a two-page reference in *Problems of Industrial Readjustment in the United States*¹ to the Works Councils in England and the experiences of the National War Labor Board in the United States. With this short account went the comment (almost prophetic, it now appears) that "few suggestions for the readjustment of labor conditions seem more worthy of thorough-going and candid consideration."

Eight months later, in October, 1919, came the Board's first comprehensive report of the movement, *Works Councils in the United States*.² This book gives an account of the beginnings of industrial representation in the United States, with short sketches of its installation in several modern establishments; it analyzes works councils on the basis of location, size of community, nature of industry, extent of trade-unionism, and the like; discusses types of council organization, extent of authority, methods of settling differences, and so on; and treats of the functions and activities of works councils. In this volume the Board began the good work, since continued, of presenting statistical data to which, of necessity, every writer on the subject turns when in search of definite facts relating to employee representation.

In February, 1920, the Board produced a 32-page *Works Council Manual*,³ "intended for the practical use of the employer who has definitely determined to introduce a Works Council into his establishment." This report covers such

1. *Problems of Industrial Readjustment in the United States*; Research Report No. 15. New York, National Industrial Conference Board, Feb., 1919.

2. *Works Councils in the United States*; Research Report No. 21. New York, National Industrial Conference Board, Oct., 1919, pp. 135.

3. *A Works Council Manual*; Research Report No. 26. New York, National Industrial Conference Board, Feb., 1920, pp. 32.

matters as types of councils, the best basis of representation, procedure for adjusting disputes, problems connected with elections, meetings, and other council affairs. These hints on what to do and how to do it must have been especially helpful in those days when but few experiences with employee representation had been related in print. But they are also useful today.

Two years later, there was sufficient new material on hand to warrant the publication of another book, *Experience with Works Councils in the United States*.⁴ More than half of the report has to do with details of introduction and operation of works councils, bringing up to date the subject-matter discussed in the *Works Council Manual*. Of great interest are several generalizations based on a survey of employee representation up to that time. It had been discovered, for example, that most of the shop committees established by the National War Labor Board and the Shipbuilding Adjustment Board had ceased to function, but that only a few of those introduced voluntarily had been abandoned. There was noted a lessened tendency to use representation for presenting complaints and grievances, and an increased interest, on the part of committeemen, in general business conditions and plant efficiency. The growing popularity of employee representation was indicated by testimony of management and workers that the effect of works councils was beneficial, that foremen and workers were getting along better than formerly, and that there had been gains in productive efficiency. Two sections of the book of particular value to students of labor relations are Chapter 2, dealing with the experiences of thirty-seven firms that, for one reason or another, discontinued their works council plans, and the whole of Part III, in which are set forth employers' opinions on selling the idea to the workers, the importance of maintaining the interest of both management and men, and the great usefulness of employee representation in large organizations.

4. *Experience with Works Councils in the United States*; Research Report No. 50 (National Industrial Conference Board). New York, The Century Co., May, 1922, pp. 191.

*The Growth of Works Councils in the United States*⁵ is a statistical summary. It presents, with very little comment, figures showing gains and losses in employee-representation activity, from 1919 to 1924. It tells of the distribution of works councils by states, industries, size of establishments, dates of organization, and types of plans. One table indicates the causes of discontinuance of works councils in thirty-five plants; and there is a selected list of one hundred concerns using employee representation, showing the type of plan in operation and the date of installation. This pamphlet is a great time-saver for anyone needing definite data on the representation movement. With the publication of *Experience with Employee Representation*, which is expected to appear within a few months, the National Industrial Conference Board will round out ten years of research in this field, and will have contributed more than any other single agency to the spread of information on industrial representation.

The Shop Committee,⁶ by William Leavitt Stoddard, is an early work on representation in industry which has been quoted widely. Mr. Stoddard was an Administrator for the National War Labor Board, and he played a leading part in the development of a joint committee plan in the General Electric Company's works at Lynn, Massachusetts. This plan is described in detail, and three other shop committees are outlined. There is advice on technical points, such as the basis of representation, election machinery, and methods of procedure, based largely on the writer's first-hand experiences. A statement of the fundamental principles of the shop committee and a short historical sketch add to the value of this "handbook for employer and employee." In his concluding chapter, Mr. Stoddard suggests that "the shop committee, meaning thereby the *idea* of joint shop and industrial com-

5. *The Growth of Works Councils in the United States*; Special Report No. 32. New York, National Industrial Conference Board, Inc., 1925, pp. 15.

6. *The Shop Committee*, by William Leavitt Stoddard. New York, The Macmillan Co., 1919, pp. 105.

mittees and councils, is a substitute for trade unionism. It is a substitute which the unions and the employers will welcome." This was written, of course, at a time when organized labor seemed favorable to representation, and when it could not be foreseen that the American Federation of Labor would definitely take up arms against it.

Bearing the same date as Mr. Stoddard's book (1919), is another, founded on practical knowledge. John Leitch's *Man-to-Man*⁷ is the story of the "industrial democracy" form of representation which Mr. Leitch himself devised. The plan provides for House, Senate, and Cabinet, so-called because industrial democracy was to grant the economic world the blessings that American democracy had brought into the field of political activity. These three groups are in reality committees of representatives, the House alone being elected by the workers, while the Senate and Cabinet are appointed by and represent management. Mr. Leitch introduced this arrangement into a number of establishments, and found that it worked well. *Man-to-Man* tells of remarkable accomplishments in three plants that had been in a very bad way. To these and other concerns industrial democracy has "brought at least these five changes:

1. An increase in production.
2. A decrease in the cost of production.
3. A decrease in the labor turnover.
4. A reputation throughout the community as a desirable place to work in, and consequently a greater ease in hiring men.
5. An immunity from strikes and other labor troubles."⁸

Not content with general statements, Mr. Leitch gives exact figures, showing reduction in hours with no loss in output, percentage decreases in costs of production, and so on.

Mr. Leitch knows how to handle words; indeed, one is inclined to wonder whether his industrial democracy is not too largely a matter of phrases. "The underlying principle of Industrial Democracy is the *square deal*." "The object of

7. *Man-to-Man*, by John Leitch. New York, B. C. Forbes Co., 1919, pp. 249.

8. *Ibid.*, p. 169.

Industrial Democracy is to gain a collective human interest." He won the workers of the Packard Piano Company with the slogan: "If there is no harmony in the factory, there will be none in the piano." He gets results, it would seem, chiefly through teaching the workers the true meaning of "Justice, Coöperation, Economy, Energy, and Service." Mr. Leitch has been called the "industrial evangelist," and his message of good cheer is addressed to a world weary of industrial strife. With his recital of accomplishments, he gives the impression that the day of miracles is still with us. The book must have proved convincing, since there were forty-three firms using the Leitch plan in 1922 as against ten in 1919. But its popularity soon waned, both absolutely and relatively, and by 1926 the plan had been retained by only twenty-seven concerns.

Two of the best all-round treatises on employee representation are university publications. They are *Workmen's Representation in Industrial Government*,⁹ by Earl J. Miller, and *The Shop Committee in the United States*,¹ by Carroll E. French. They have a great deal in common. Both trace the development of the movement, give information about types and organization, show the effects of representation in selected cases, and discuss the attitude of trade unions. But there are differences in emphasis, and more particularly in interpretation.

Mr. Miller's book is the larger of the two, mainly because of its wealth of illustrative material. His inquiry, too, is somewhat more extensive than Mr. French's. He has included, for example, an exceptionally good chapter on the history of representation in England, Germany, Austria, Norway, and Czechoslovakia. Another excellent bit of work is his analysis of numerous cases handled by shop committees. The chapter on "Union Joint Councils in the United States"

9. *Workmen's Representation in Industrial Government*, by Earl J. Miller. Urbana, Ill., University of Illinois Studies in the Social Sciences, vol. x, nos. 3 and 4, Sept.-Dec., 1922, pp. 182.

1. *The Shop Committee in the United States*, by Carroll E. French. Johns Hopkins University Studies in Historical and Political Science, Series XLI, no. 2. Baltimore, The Johns Hopkins Press, 1923, pp. 109.

(a phase of the subject neglected by most writers) shows that, before the advent of non-union employee representation, industrial democracy was fostered through *trade-union* councils of various types, whose functions were to draw up trade agreements, solve jointly any trade problems that might arise, and adjust differences developing between local parties to the national trade agreements. Mr. Miller believes that these union joint councils have been greatly underrated.

Covering the same general field, and using necessarily many of the same data, Messrs. Miller and French are led to a striking conflict of opinion on one important point. This is the perplexing question of union versus non-union representation. Mr. French is clearly more thoroly convinced of the virtues of non-union shop committees than is Mr. Miller. Tho he agrees that trade-union antagonism to non-union plans is soundly based, he recommends a modification of the present union policy of pitched battle. The continuous existence of a shop committee is an evidence that it works successfully, he says. "The establishment of shop committees in fields impossible for the union to organize should be encouraged. With existing shop-committee systems, the unions should strive for a working arrangement, and above all for the sympathy both of the men and the employers." "The shop committee may eventually prove to be an ally of the trade union," is his conclusion.²

Mr. Miller, on the contrary, sees in non-union representation a menace to genuine collective bargaining. He has found that "many of the non-union councils are organized, either to avoid dealing with existing unions, or to prevent the union organizations from getting in." Admitting that non-union representation has brought gains to workers in many plants, he holds that the gains "must be purchased at the expense of retrogression in methods of collective bargaining." There is need for "an organization sufficiently broad in scope to attack industry-wide problems. For example, no local union can hope to obtain substantial improvements in the economic

2. Mr. French's argument is stated fully on pages 103 and 104 of *The Shop Committee in the United States*.

status of its members so long as low wages, long hours, and adverse working conditions prevail in any substantial portion of the industry." The possibility of union-management co-operation has been demonstrated, says Mr. Miller, by the Works Council movement in England, and by the good results in the printing and electrical trades in the United States.³

Tho Mr. French and Mr. Miller finally arrive at fairly definite conclusions, they give every indication of having approached their task without bias. Their books are, of course, the more valuable on that account. This same spirit of impartial inquiry is evident in three studies of employee representation sponsored by the Russell Sage Foundation.⁴ They were undertaken with the thought of learning to what extent certain much-discussed plans of employee representation were fulfilling their stated mission. Ben M. Selekmán was chosen to conduct the investigations. His method, in brief, was to spend in the field as much time as seemed necessary, interviewing workers, company officials both great and small, and disinterested citizens. He inspected working and living conditions, and examined minutes of meetings and other important records. His preliminary reports were submitted to champions and opponents of representation, and criticisms were invited. Every disputed point was reexamined, and in two of the three studies Miss Van Kleeck, Director of Industrial Studies of the Russell Sage Foundation, made field inspections which "confirmed the essential facts upon which Mr. Selekmán's report was based." In view of the pains taken to ensure accuracy, it seems doubtful whether a fairer picture of actual conditions could be obtained.

Two of these studies relate to the "Industrial Representation Plan" of the Colorado Fuel and Iron Company, one of

3. See *Workmen's Representation in Industrial Government*, pp. 159-172.

4. *Employees' Representation in Coal Mines*, by Ben M. Selekmán and Mary Van Kleeck. New York, Russell Sage Foundation, 1924, pp. 454.

Employees' Representation in Steel Works, by Ben M. Selekmán. New York, Russell Sage Foundation, 1924, pp. 293.

Sharing Management with the Workers, by Ben M. Selekmán. New York, Russell Sage Foundation, 1924, pp. 142.

the earliest examples of employee representation, and one that served as a pattern for a number of shop committees that were later established in other industries. The Colorado Fuel and Iron Company operates both coal mines and steel works, and separate volumes have been devoted to these two phases of its business. The "Rockefeller Plan" (as it is often called because of the younger Mr. Rockefeller's interest in it) was installed in the coal mines in 1915, following a strike which was fought mainly in the hope of winning recognition of the union. This bitter and bloody conflict had ended disastrously for the miners, and Mr. Rockefeller looked to industrial representation to bring about "a permanent condition of peace."

Mr. Selekmán spent more than five months in Colorado studying the situation, and the result is a good-sized volume that includes a historical sketch, a description of coal-mining as an occupation, an analysis of the Rockefeller Plan with a record of its practical application, and an account of trade-union activities in the Colorado mines. He found that industrial representation has brought better living conditions and better relationships between management and miners, but believes that these changes are due primarily to the initiative of management. He discovered that the employees were not making use of the plan for the presentation of grievances. Since the company pays the same wages as its competitors in the unionized fields, the miners feel that they are benefiting by the hard-fought battles of the United Mine Workers of America, and they resent this fact. Mr. Selekmán reports that "a continuous conflict is in existence in Colorado between employee representation and trade unionism, which must be wisely dealt with before any plan can be made to work satisfactorily." The critical labor relations in Colorado mines today, four years later, show that the struggle is still on, and that Mr. Selekmán was justified in pronouncing the Rockefeller Plan "an incomplete experiment," which had not yet become "an 'industrial constitution' for the company or for the industry, or a partnership for labor."

Industrial representation was set up in the Minnequa Steel

Works of the Colorado Fuel and Iron Company, on May 6, 1916. There had been no strike and no demand for representation; and yet nearly three fourths of the workers taking part in a secret ballot favored the introduction of the plan. *Employees' Representation in Steel Works* is almost identical in treatment with *Employees' Representation in Coal Mines*. But it is a more encouraging book, for Mr. Selekman finds in industrial representation in the steel works less to criticize and more that he can approve. The steel workers have been much more successful than the miners in getting results through their committees. They worked for a shorter working day and eventually won an *actual* eight-hour day, and not merely the basic eight hours granted by the United States Steel Corporation. They took seriously the company's promise of wages conforming to those paid by competitors, sent an investigating committee to eastern plants, and secured revision of certain wage rates. Through their committees, they have brought about improvements in working conditions; and by exercising their right to review suspensions and discharges, they have attained greater security in their jobs. On the other hand, the workers complain that foremen and superintendents do not coöperate as fully as they should in the adjustment of grievances, and that the employees' representatives are not always consulted before important changes are made. The chief criticism, however, relates to wage standards. Since wages of the Minnequa workers are made to conform to those of the United States Steel Corporation, where there is not even a pretense of collective bargaining, "the scope of their representation does not give them an effective share in determining their own earnings, and none whatever in determining those of their fellow-workers in the steel industry at large." Mr. Selekman regards this as a very serious defect in a representation plan which, in other respects, has proved useful to both employer and employees. An excellent synopsis precedes the detailed study, and will be welcomed by the reader pressed for time. This commendable feature is also included in Mr. Selekman's report of representation in coal mines.

Sharing Management with the Workers is the story of the Partnership Plan of the Dutchess Bleachery, of Wappingers Falls, New York. Tho this is one of the largest mills of its kind in the country, it employs only about six hundred workers, most of whom are unskilled, receive low wages, and have small hope of advancement. They live in company houses which, up to a few years ago, were in very bad shape, and there was no provision for pure water or decent sanitation. These are but a few of the difficulties that confronted the management in attempting to establish a program of general improvement; one of the most serious obstacles was a reputation for harsh discipline, built up over a half-century or more by the former owners of the plant.

An unusual feature of this plan is worker representation on the Board of Directors. The community of Wappingers Falls, also, is represented by a director, so that but three of the five members of this Board have as their chief concern the interests of the management. Profit-sharing is provided for; the company books are open, and the employees are kept informed about the business at all times. Mr. Selekmán's investigation convinced him that the workers had entered wholeheartedly into the venture, which has achieved almost phenomenal results. The gains to the workers include not only a virtual reconstruction of community life and vastly improved living conditions, but the prompt adjustment of grievances, health and unemployment insurance, a short vacation with pay, a share in the profits, and so on. Mr. Selekmán regards this plan as "one of the most advanced, most sincere, and most comprehensive schemes of industrial relations introduced into industry on the initiative of the employers. Moreover, it brings to light the absentee-landlord in a new rôle — that of promoting a democratic relationship among the various branches of an enterprise."

Another firm believer in this plan is James Myers, who is (or was) Executive Secretary of the Board of Operatives at the Dutchess Bleachery. Mr. Myers's book, *Representative Government in Industry*,⁵ is not limited to any single example

5. *Representative Government in Industry*, by James Myers. New York, George H. Doran Co., 1924, pp. 249.

of employee representation, tho naturally he draws heavily upon his first-hand experience. He begins with a discussion of industrial relations under modern economic conditions, the mental reactions of the worker, economic inequality, and the effects of these factors upon industrial strife. He believes in self-determination in industry, and insists that there is no such thing as sincere industrial democracy without "*a willingness to recognize the union if the workers request it.*" He goes further, and charges that all "open shop" industrial democracy plans *do* discriminate against the unions (even tho union men are hired), since they refuse to deal with the union workers as such; and he notes that 95 per cent of the employee representation plans are in open-shop establishments. He holds that industrial democracy is not complete without some form of additional compensation or profit-sharing. Finally, he emphasizes the need of full publicity, which would include allowing employees to visit committee meetings and the posting of minutes showing how each representative voted on every measure considered.

These comments give some slight idea of Mr. Myers's views, reached after long association with committees operating a successful plan. However, they do not indicate at all adequately the immense practical value of his book. It is fairly crammed with illustrations of how to run and how not to run an employee-representation plan. There are separate chapters on the technique of representation, profit-sharing, and other important subjects. And, pleasant to relate, it is a book that reads well, and can be relied upon to hold one's interest to the end.

The most recent work on the technical side of the movement is *Employee Representation*,⁶ by Ernest R. Burton. Like most writers on this subject, Mr. Burton first sketches the development of the shop committee from its small beginnings. He then outlines the causes of conflict between management and workers, and describes briefly the motives of management in installing employee representation. Fully half of the book

6. *Employee Representation*, by Ernest R. Burton. Baltimore, Williams and Wilkins Co., 1926, pp. 283.

is devoted to concrete problems that arise in connection with the organization and administration of a scheme of this kind. Mr. Burton's broad knowledge of this subject enables him to make observations that should aid greatly in installing a system of representation and keeping it in good working order. Whether the workers shall be permitted a full-time, paid representative; whether there should be separate or joint conferences, or both; the relative merits of individual and unit voting; provisions for appeals from decisions — these are some of the puzzling questions on which he offers advice, based on successes and failures of the past decade.

There are a dozen interesting pages dealing with arbitration; and, in view of the fact that so many managers advocate final settlement of disputes in this way, it is somewhat surprising that Mr. Burton questions the wisdom of including a general arbitration clause. He concedes that specific problems might be arbitrated by mutual consent; but "except in the case of a public business, where the arbitration may be regarded as expressing the will of the community of consumers, it is doubtful whether the administrative heads of an enterprise ought ever to relinquish to an arbitrator, unless compelled by law to do so, their obligation to negotiate such questions [as those involving expenditure of money by the company] with the employees for the owners." If employee representation does remove hope of effective collective bargaining, as many students of labor believe, and if it is not to be fully equipped with machinery for arbitration, it is little wonder that the American Federation of Labor regards the works council movement as an anti-labor move, likely to destroy all chance of securing "fair" treatment. Unquestionably, great gains in wages, hours, and working conditions have gone hand in hand with employee representation, as Mr. Burton says; but he does not explain how a works council plan, without arbitration, could secure for the workers even the fairest of demands, if the employer should prove balky. But, then, this is essentially a book of practical application, written from the employer's side of the proposition.

The social point of view is taken by W. Jett Lauck, in his

Political and Industrial Democracy,⁷ in which he seeks to appraise employee representation according to standards of democracy. An interesting preliminary to the task is a collection of post-war criticisms of industrial autocracy, as expressed by church organizations, business men, labor leaders, and others. Mr. Lauck then gives a first-rate summary of twenty-two of the better-known representation plans, and proceeds to test them by certain "standards of industrial democracy" that he has formulated. No business unit is truly democratic, he says, which does not permit collective bargaining and coöperation under a "definite, independent, basic organization of employees with distinct activities and resources"; which does not have democratic wage standards (that is, a minimum wage sufficiently high to buy a comfortable living, with certain differentials above the minimum); which does not provide for participation in profits, employee stock-ownership, and employee representation on the Board of Directors; and which does not strive for "the elimination of the autocratic domination of the so-called investment banker."

As might be expected, the organizations that measure up to these standards are very few. There are five firms that are grouped together as "torchbearers of industrial democracy." William Filene's Sons, the Dutchess Bleachery, the Dennison Manufacturing Company, the A. Nash Company, and the Philadelphia Rapid Transit Company have plans which "stand out above all others as indicating a sincerity of purpose and as offering a basis for future constructive action." The Mitten Plan of the Philadelphia Rapid Transit Company comes in for particularly high praise. It meets all requirements but that of strict union organization, and Mr. Mitten has agreed to unionization whenever two thirds of his workers request it. Tho there are so few genuinely democratic plans, Mr. Lauck is hopeful of the future: "The discovery of the theoretical worthiness of even one plan in itself gives assurance of the possibility of the general realization of industrial democracy in the coming years."

7. *Political and Industrial Democracy*, by W. Jett Lauck. New York, Funk and Wagnalls Co., 1926, pp. 374.

Organized labor's case against employee representation is presented by Robert W. Dunn, in a small book entitled *Company Unions*.⁸ This is admittedly an attack, and a most violent one, on all non-union forms of industrial representation; for "a company union is what the employers usually designate as a works council, a works committee, an employee representation plan, an employee conference, or an industrial assembly." Mr. Dunn asserts that representation plans are often forced upon the workers, and refers specifically to the introduction of employee representation in the New York, New Haven and Hartford Railway, through the agency of the Sherman Service, Inc., "industrial spy concern." He describes the "yellow dog" feature, requiring the workers to agree in writing "not to join or affiliate with any other organization, association, or trade union covering the same line of work." He states that, despite promises of "no discrimination," hundreds of workers have been "laid off, demoted, and otherwise victimized" by company unions because of trade-union activities. The company union, he says, is not really a union at all; it does not permit genuine collective bargaining, since there is no "strike power"; it does not allow independent outside representatives for the workers, and even forbids affiliations with other company-unionized plants of the same company.

The book consists largely of descriptions of specific plans now operating in important business concerns, with a running accompaniment of denunciation. Much of the criticism is undoubtedly deserved. It is unfortunate, however, that Mr. Dunn should make little or no effort to give credit where credit is due. Some of the most advanced and most satisfactory instances of employee representation are omitted entirely; for example, the Baltimore and Ohio, Filene, and Philadelphia Rapid Transit plans. To those who know of these instances, the fact that they are neglected will appear as a weakness in Mr. Dunn's case. Nevertheless, he doubtless considers this omission wholly justified, for in the battle

8. *Company Unions*, by Robert W. Dunn. New York, Vanguard Press, 1927, pp. 206.

in which he is engaged no quarter is to be given. He is convinced that no good can come out of employee representation, and he is prepared for a fight to the death. This spirit is evident throughout the book, and is emphasized in the concluding paragraph: "Every energy and force possessed by the American trade union movement is demanded in the campaign to destroy [the company union]. Before the trade union movement can afford to become 'constructive' it must attend to this necessary task of destruction."

For the present, Mr. Dunn has had the last word on employee representation. But there will soon be further volumes on the subject. A new book to be issued by the National Industrial Conference Board, has already been mentioned. The Russell Sage Foundation has conducted investigations, not yet published, of the works councils of the Rock Island Arsenal and the Filene Coöperative Plan. These reports will be a welcome addition to the slowly accumulating body of reliable facts relating to actual achievements through representation. There is need for more studies of this kind, and for further exact data on concrete gains, such as the figures presented by Mr. Leitch. If representation is to be adopted more widely by employers, they must be convinced that it will pay; and if employees are to lend their efforts to making it function properly, they, too, must be shown that it will be to their advantage. Hence the demand for more light on the results of the movement. The technical side of employee representation has received its full share of attention; indeed, it has been dealt with so often that considerable repetition has resulted. Finally, there seems to be room for a general work, which shall tell simply, concisely, and impartially what employee representation has succeeded in doing, where it stands today, and what may reasonably be expected of it in the future. There is no single volume to which one may turn for a satisfactory treatment of these points.

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NOTES

A NOTE ON COMPARATIVE COSTS

THE theory of comparative cost is customarily invoked in support of the doctrine that free commerce among nations results in a benefit to all countries so engaged. Ignoring the advantages derived from securing commodities that could not be produced at home, the benefit of international trade is said to be measured by the excess of the product after specialization has taken place, over the product before specialization.¹ The distribution of this excess product —

1. Mill writes: "If two countries which trade together attempted, as far as was physically possible, to produce for themselves what they now import from one another, the labour and capital of the two countries would not be so productive, the two together would not obtain from their industry so great a *quantity of commodities*, as when each employs itself in producing, both for itself and for the other, the things in which its labour is relatively most efficient. *The addition thus made to the produce of the two combined, constitutes the advantage of the trade.*" (Principles of Political Economy, Bk. III, chap. 17, §3.)

This position seems to be taken as well by many textbook writers who expound the classical system; for example, Clay, in his *Economics for the General Reader*, argues as follows (pp. 205, 206): "Each country, by specializing in those commodities for the production of which it has the greatest relative advantages, obtains a bigger return for its expenditure of labor and capital than it would have done if it had not specialized but had devoted part of its efforts to producing the commodities for which it was relatively less well fitted. *The total product of the two countries together will be greater than if each had produced all the commodities without specializing.*"

In both of the above quotations, the italics are the writer's.

Since the preparation of this paper, the writer has discovered an analogous argument, tho less detailed than that presented below, in V. Pareto, (*Manuel d'économie politique*, translation of A. Bonnet, Paris, 1909), pp. 507-514, especially p. 509, note 1. A number of other writers have argued that a net commodity benefit may not exist, but these have diverged from one or another of the above listed assumptions of the classical comparative cost problem. See especially Cournot, *Recherches sur les principes mathématiques de la théorie des richesses*, pp. 187-198; R. Schüller, *Schutzzöl und Freihandel*, chap. 2; F. D. Graham, "Some Aspects of Protection Further Considered," *Quarterly Journal of Economics*, 1923.

is the participation in the commodity increase engendered by international trade — is then taken to be determined by the Equation of International Demand. This paper is devoted to an examination of the first point, namely, that the product after specialization exceeds the product before specialization.

To establish the above conclusion, the logic of comparative cost in its more rigorous formulations proceeds upon the following assumptions: (1) labor-time is a measure of cost; (2) a given country has an absolute advantage over another in the manufacture of, say, two products (or an equal advantage in one product tho an absolute advantage in the other); (3) each country has a comparative advantage in one product; (4) the conditions of cost are constant; (5) after specialization has taken place, each country devotes itself to that product in which it has a comparative advantage; (6) the total amount of labor so devoted to a single product is equal to the amount formerly devoted to both products. These specific postulates are usually deemed sufficient to prove that the product after specialization is greater than the product before specialization.

Yet one may set up two arithmetical examples, each meeting the above conditions, tho only one of them confirms the customary conclusion. Two such examples are presented in the accompanying table. The relevant data are there given in sufficient detail and require no elucidation.

CASE I				
	Product	England	Sweden	England & Sweden
Before specialization	Cotton	10 labor = x yds.	15 labor = x yds.	2 x yds.
	Iron	12 labor = y cwts.	15 labor = y cwts.	2 y cwts.
After specialization	Cotton	22 labor = 2.2 x yds.		2.2 x yds.
	Iron		30 labor = 2 y cwts.	2 y cwts.

CASE II				
	Product	England	Sweden	England & Sweden
Before specialization	Cotton	10 labor = x yds.	10 labor = .67 x yds.	1.67 x yds.
	Iron	10 labor = .83 y cwts.	10 labor = .67 y cwts.	1.50 y cwts.
After specialization	Cotton	20 labor = 2 x yds.		2 x yds.
	Iron		20 labor = 1.34 y cwts.	1.34 y cwts.

It need only be pointed out that the cost function is the same in the two examples, one example being really a derivative of the other. The story told by the table is clear and straightforward: in Case I, there is a greater product after specialization; in Case II, the amount of cotton is greater, but the amount of iron is smaller, and since the two commodities are incommensurable, it cannot be said that a greater total product exists.²

If we look at the above two cases more closely, we see that tho the cost function is the same in both, the amount of labor devoted to the manufacture of the commodities in question differs in the two examples, and that this constitutes the sole difference between them. If varying amounts of labor will establish or fail to establish a greater product after than before specialization, we are led to inquire: what must the amounts of labor be to yield the result that we desire to prove? Or, to state the problem less invidiously, what must the relationship between the amounts of labor devoted to each product in each country be, in order that the product after specialization may exceed the previous quantity? We may answer these questions readily by throwing the given conditions of comparative cost into algebraic form.

Let the production situation before specialization in countries I and II be as follows: in country I a unit of labor produces x of A , and y of B , and m units of labor are devoted to A and n units to B ; in country II, a unit of labor produces $x + \Delta x$ of A , and $y + \Delta y$ of B , r and s units being expended on A and B , respectively. Let us further assume that $\frac{x + \Delta x}{x} > \frac{y + \Delta y}{y}$. Under these conditions, according to customary deliverances, once trade is established, country I will produce B , and country II will make A .

Let us now compare the products before and after specialization. Before specialization the total product of the two countries would be: $mx + r(x + \Delta x)$ of A and $ny + s(y + \Delta y)$ of B . After specialization, when $(r + s)$ units of

2. See *infra*, p. 500, footnote 8.

labor will be devoted to *A* in country II, and $(m + n)$ to *B* in country I, the total product for the two countries will be $(r + s)(x + \Delta x)$ of *A* and $(m + n)y$ of *B*. To make comparison easier we may restate schematically the amounts of *A* and *B* produced before and after specialization:

Product *A*.

Before specialization: $rx + r\Delta x + mx$

After specialization: $rx + r\Delta x + sx + s\Delta x$

Product *B*.

Before specialization: $ny + sy + s\Delta y$

After specialization: $ny + my$

From this juxtaposition of aggregates of *A* and *B*, we can readily see that the total product after specialization will exceed the previous product if $s(x + \Delta x) > mx$ and $my > s(y + \Delta y)$, that is, when $s > \frac{mx}{x + \Delta x}$ and $m > \frac{s(y + \Delta y)}{y}$. Of

course, if either one of these two inequalities be an equality, a greater total product will still hold. Here, then, we have the rule that permits us to set up arithmetical examples to prove a greater total product or the contrary.

The conditions of Case II admit of generalization, and we may test our derived rule in that example. Let us assume m , n , r and s to be equal, as is the situation in Case II, and let us represent these quantities by z . If we now apply the above inequalities, $s(x + \Delta x) > mx$ reduces to $z(x + \Delta x) > zx$, which is obviously true; and $my > s(y + \Delta y)$ becomes $zy > z(y + \Delta y)$, which is obviously false. The above rule is that, in order that the product be greater after specialization than before, the two inequalities would have to hold (or else one inequality and one equality). Since only one of the above inequalities holds, the total product cannot be said to be greater.

A word might be added concerning the use of arithmetical examples in expositions of comparative cost. All the examples used both by Ricardo and Mill establish a greater

total product. Ricardo used only a single example,³ the celebrated cloth-wine case, and by dint of assigning certain unequal values to the labor quantities involved, he was able to set up a greater product case. Mill, on the other hand, has a number of comparative cost examples; in setting them up he observed one of two rules: he either used unequal labor quantities of such a sort that the total product after specialization was greater than that preceding it,⁴ or else he used equal quantities of labor along with postulate (2) in its modified form—that is, that one country has an absolute advantage in one product, and an equal advantage in another—and thus was able to prove a greater total product⁵ (for if we let $y + \Delta y$ become y , then in the z unit case, $zy > z(y + \Delta y)$ becomes $zy = zy$). It is not suggested here that either Ricardo or Mill deliberately chose such examples as would establish the case they aimed to prove. It is merely asserted that the examples they did choose seemed to establish their case, whereas other equally valid examples would have failed to do so.

That a failure to appreciate the point argued in this paper may lead to misstatements is illustrated in a recent article by Professor Viner.⁶ This writer restates the classic Ricardian example in "modern form," without observing that in the restatement a new assumption is introduced, namely, equality of labor amounts, and that with such an assumption no greater total product can be said to exist (except when the designated variant of postulate (2) is used). Viner's restatement is as follows:

<i>England</i>	<i>Portugal</i>
100 days labor = 100 cloth	100 days labor = 125 wine
100 days labor = $83\frac{1}{3}$ wine	100 days labor = 111 cloth

And from this he argues that "in order that all the benefit should go to Portugal, 100 cloth would have to exchange for

3. D. Ricardo, *Principles* (Everyman edition), p. 82. Cf. also p. 83, n. 1.

4. J. S. Mill, *Principles* (8th ed.), ii, 117.

5. *Ibid.*, pp. 126, 142.

6. J. Viner, "Angell's Theory of International Prices," *Journal of Political Economy*, October, 1926.

83 $\frac{1}{3}$ wine" and that "in order that all the benefit should go to England, 100 cloth would have to exchange for 112 wine."⁷ It would seem, however, that the argument should run in the following terms: If the rate of exchange were 100 cloth for 83 $\frac{1}{3}$ wine, England would be no better or worse off after than before specialization, Portugal would have more of wine, but less of cloth, and hence nothing could be claimed in the way of a commodity benefit; and if the rate of exchange were 100 cloth for 112 wine, the converse would hold true — that is, Portugal would be in the same condition after as before specialization, and England would have more of wine but less of cloth, and therefore no benefit in the form of a net commodity increment could be claimed for England.⁸

It need scarcely be added that the argument of this note is confined exclusively to an examination of benefit in strict commodity terms.

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NEW SOUTH WALES FAMILY ENDOWMENT ACT, 1927¹

AFTER the unsuccessful maintenance-of-children bills of 1919 and 1921, the subject of family endowment received little legislative consideration in New South Wales until the announcement of the Industrial Commissioner on December 15, 1926, focussed attention upon it. The announcement fixed the basic wage for adult male employees at £4 4s per week,—the same amount as that set in August, 1925,—but

7. Viner, *op. cit.*, p. 609.

8. It may be retorted that a comparative cost example sets forth only the labor-time ratios among commodities, and says nothing as to the total labor time devoted to these products. But if this be the case, the existence of a net commodity increment is indeterminate because of the very assumptions of the problem.

1. Information upon which this note is based is taken from the *Monthly Labor Review*, the *London Times*, the *New South Wales Industrial Gazette*, the texts of the several laws and regulations, and from private communications.

recommended that this be supplemented by a scheme of family endowment.

Organized labor, altho not hostile to the principle of endowment, provided that endowments meant an increase and not merely a redistribution of wages, immediately protested that the renewed rate did not enable the single man or the childless married man to meet the higher cost of living. The Labor Government, however, led by Premier Lang, accepted the recommendation of the Commissioner, and early in February, 1927, introduced a bill into the Legislative Assembly. The bill provided for an allowance of 5s per week for each child, to be paid to mothers in families where the combined income did not exceed £364 per annum. It provided also for an endowment fund, to be supported partly by contributions from employers and partly by state contributions. The bill was passed by the Assembly and went to the Council, where consideration was postponed until a select committee could investigate its financial aspects.

It was believed by the Government, apparently not without reason, that this action on the part of the Council was equivalent to an indefinite tabling of the bill. As a substitute, a bill instructing the Industrial Commissioner to declare without delay a living wage for adult males, based upon the needs of a man, wife, and two children, was introduced in and immediately passed by the Assembly. This also the Council declined to accept, and amended the bill so that the basic wage might be fixed regardless of the number in the family.

At this stage the Labor Party caucus decided to abandon the basic wage bill, and the Government reintroduced the family endowment measure. A series of conferences between leaders of the two houses failed to produce agreement on the points most disputed — the questions of the upper income level for families eligible to receive endowments, and of the number in the family to be used as the standard for the basic rate. Further prolonged conferences were necessary before the deadlock was broken, and the measure as finally enacted

into law represents a series of compromises, with the Government giving way on most of the contested points.

The act as passed² provides for a weekly payment to the mother, of five shillings for each child, or, if there be no mother, to the person maintaining and having legal custody of the child, for the maintenance, training, and advancement of the child. Payment shall be made in respect of children under fourteen years of age; but if the child be incapacitated from earning a living, the Commissioner may continue the allowance for not more than two years thereafter. Provision shall be made for illegitimate children only in those cases where the Commissioner specifically recommends payment. No payment shall be made in respect of (1) any child not in fact maintained as a member of the family of the claimant, (2) any child for whom a pension is paid or for whom an allowance is payable under the Commonwealth Public Service Act or other acts, (3) any child of an alien, Asiatic or aboriginal father, unless the child was born in Australia. Endowments, moreover, are limited to cases where the mother is a resident, of New South Wales, and has been continuously for at least two years a resident, and where the child has resided in New South Wales for not less than two years (or, if under two, was born there).

No certificate for endowment shall be issued in any case where (a) the family income in the twelve months immediately preceding the date of the claim exceeded the aggregate of the following amounts, namely: the amount for one year of the living wage based on the requirements of a man and wife without children and for the time

2. New South Wales Act No. 39, 1927: "An act to make provision for the benefit of children by means of endowments payable to mothers; to provide for a Family Endowment Fund; and for other purposes connected therewith." (April 11, 1927.)

This act is supplemented by New South Wales Act No. 40: Finance (Family Endowment Tax) Act; "An act to impose a tax upon employers; to declare the rates of contributions to be made by employers to the Family Endowment Fund; and for purposes connected therewith." (April 11, 1927.)

Various administrative provisions are contained in the Regulations issued by the Governor in accordance with the provisions of these acts, and put in force August 3, 1927.

being in force and appropriate to the case and the amount of thirteen pounds for each child in the family; or (b) if the magistrate is satisfied that the claimant or his spouse has directly or indirectly deprived himself of property or income in order to qualify for or obtain endowment.

Where the family income would be increased beyond this income by the payment of the full allowance, only so much shall be paid as to bring the income up to this aggregate.

For the purposes of this act, "family income" is to be construed as the combined incomes of the claimant, his spouse, and all children under fourteen years of age. The following items are specifically included: weekly compensation payments; moneys derived from the investment of capital; 5 per cent of the value of real or personal property (other than the residence and furniture of the family) which produces no income, or less than 5 per cent; and any amount applied for the benefit of the child by the administrator of an estate, the executor of a will, or the like. But "family income" does not include sickness allowances or funeral benefits, fire insurance, lump-sum compensation or superannuation payments, earnings of a child [as distinct from other income] under the age of fourteen years, the mother's earnings from casual employment, overtime earnings in usual employment, pensions. "In any case where the income is derived otherwise than from wages the magistrate shall deduct an amount equal to the amount which in his opinion has been expended in the production of that income." Special provisions are made to cover the cases of children in charitable institutions.

A Family Endowment Fund is established, in which all moneys collected in accordance with the provisions of the act shall be deposited. Revenue so collected shall be applied for no purpose other than those designated in the act. The fund constitutes a separate account in the Treasury, available to the Commissioner and under his control. The Treasurer may make advances to the fund, but they shall be repaid as soon as possible. From this fund all expenses of administration of the act are to be defrayed.

The necessary revenue is to be raised solely by contribu-

tions of employers, in proportion to the total amount of wages paid by them. This proportion was fixed by the Finance Act at 3 per cent. Where the employer is a governmental agency, "there shall be paid to the Family Endowment Fund out of the Consolidated Revenue Fund or out of the funds of said statutory authority, as may be directed by the governor, such sum as is equivalent to the amount which the employer would have paid if liable to taxation." Hospitals, charitable organizations, and employers paying total wages of less than £750 per annum are exempted from this provision. Every employer shall make a return not later than two days after the expiration of the prescribed periods (such periods being designated in the Regulations as the period from July 23, 1927 to August 31, 1927, and every calendar month thereafter), setting out the total wages paid by him during the preceding period. Further detailed returns may be demanded if deemed necessary. When board and lodgings are furnished, they shall count as if £1 per week were paid in wages. Upon the basis of returns thus made, the Commissioner shall assess the amount payable by each employer. Such assessments must be paid within five days of the receipt of the notice.

Administration of the act is under the supervision of the Commissioner of Family Endowment, appointed by the governor for a term of seven years and eligible for reappointment. He is considered as a "permanent head," and his appointment is not subject to the requirements of the Civil Service Act of 1902. In addition, a registrar and other officials may be appointed by the governor, and an advisory committee of not more than three members may be established. Clerks of petty sessions, or others, may be appointed as deputy registrars. These officials may at any time call upon other governmental departments for aid or information. They may summon witnesses, receive evidence on oath, and require the production of any documents that may be desired. It shall be the duty of the deputy registrars to receive claims, investigate claims in the prescribed manner, and keep the books, registers, and other records.

The procedure according to which claims for endowment shall be made is, briefly, as follows. Claims, accompanied by a sworn declaration concerning the family income, are made to the nearest deputy registrar, whose duty it is to make a preliminary investigation. The case is then referred to a magistrate for thoro investigation. He may, as a result of his inquiry, recommend the claim, postpone it for further evidence, or recommend its rejection. Appeal may be made to the Commissioner, whose decision is final. If the claim is awarded, a certificate is issued to the claimant, authorizing receipt of fortnightly installments for not more than one year. At least one month before the due date of the last installment, the holder of the certificate may apply for renewal, in the consideration of which the same procedure applies.

Installments are forfeited while the claimant resides out of New South Wales, or from the date when any other allowance is made. But "the right to an endowment or the amount of an endowment shall not be affected during any period covered by a certificate by reason merely of the fact that a child to which the certificate relates has within that period attained the age of fourteen years, or by reason merely of the death of any such child."

Administrative provisions are sufficiently flexible to allow every means to be used toward securing the application of the funds in accordance with the purposes of the act. Officials may at any time require a confidential report from any person. The Commissioner may cancel, suspend or reduce any endowment if he considers it expedient to do so. The investigating magistrate may make a report recommending rejection if he thinks the claimant unfit for an endowment, even tho the claimant is otherwise qualified. Where, for various reasons, the claimant is not the best one to receive the installments, provision may be made for their payment to another designated person. The paying officers, presumably the deputy registrars, may require identification before payment of installments is made.

Falsification of returns, misrepresentation, personation in order to obtain payment of installments, and other offences

against the act are subject to penalties of imprisonment for not more than six months, or fines not exceeding £100. In addition to any such penalty, the certificate may be cancelled. Violations of the Regulations are punishable by a fine not exceeding £50.

The amendment upon which the Council had insisted was also enacted into law.³ The amendment provided that hereafter the living wage should be based upon the requirements of a man and wife without children, and instructed the Industrial Commissioner to declare such a wage, after June 15, but not later than September 30, 1927. A separate rate might be set for rural districts if considered desirable. In accordance with these provisions the basic rate for adult male employees was set at £4 5s, for adult female employees at £2 6s, and for adult male employees in rural districts at £4 4s.⁴ Upon this basis the law was declared in effect July 23, 1927. It will be observed that the new basic rate (£4 5s) was slightly higher than the basic rate in force before (£4 4s), which had been fixed not specifically for a man and wife without children, but as a basis of general application.

Statistics relating to the total amount of endowments already distributed are not available. As regards the financial aspects of the scheme, however, it is interesting to note the amendment of December 16, 1927.⁵ Revenues from the tax on employers had so far exceeded the disbursements under the Family Endowment Act that it was provided that no contribution should be payable by any employer in respect of wages paid during the months of November and December, 1927, and that the Governor might extend this suspension of payments to such month or months of 1928 as seemed fit to him. It would seem that the 3 per cent tax represents a maximum which will not be reached during the early period of the operation of the act.

3. Industrial Arbitration (Living Wage Declaration) Act; April 11, 1927.

4. The declaration for urban districts was made on June 27, that for rural districts on July 20, 1927.

5. New South Wales Act No. 58, 1927: "An act to discontinue for a certain period the imposition of the contributions by employers to the Family Endowment Fund, etc."

This amendment also alters materially the status and functions of the office of Commissioner of Family Endowment. All of the provisions in the original act relating to the office were swept away. In their place it is provided that the Commissioner shall be appointed by the governor upon the recommendation of the Public Service Board, which is also to fix his salary. The appointment of subordinate officials shall not require the concurrence of the Commissioner. Assessment and collection of contributions shall henceforth be carried out by the Commissioner of Taxation.

There has been some discussion of possible objections to the law on the grounds of constitutionality, but at the present time it appears probable that this difficulty will not materialize and that the law will continue in force. It is, of course, too early to estimate the importance or success of the legislation.

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